

WEEKLY ABSTRACT  
OF  
SANITARY REPORTS

ISSUED BY THE  
SUPERVISING SURGEON-GENERAL, M. H. S.,  
UNDER THE  
NATIONAL QUARANTINE ACT OF APRIL 29, 1878.

VOL. III.

(Nos. 1 to 52.)

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JUL 29 1889

WASHINGTON:  
GOVERNMENT PRINTING OFFICE.  
1889.

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WEDNESDAY 17 MARCH

TO

THE HONORABLE THE SECRETARY OF STATE

WASHINGTON D C

DEAR MR SECRETARY

YOUR LETTER

OF THE 14TH INSTANT HAS BEEN RECEIVED

SS

YR SERV

Yours faithfully

\_\_\_\_\_  
JAMES EARL RAY

ENCLOSED  
FOR THE SECRETARY OF STATE



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## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 1. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., January 6, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended January 6, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended December 17 corresponded to an annual rate of 22.1 a thousand of the aggregate population, which is estimated at 9,244,099. The lowest rate was recorded in Brighton, viz., 16.8, and the highest in Blackburn and Preston, viz., 35.7 a thousand. Small-pox caused 17 deaths in Sheffield, 1 in Bristol, and 1 in Preston.

*London.*—One thousand six hundred and twenty-two deaths were registered during the week ended December 17, including 17 from measles, 38 from scarlet fever, 23 from diphtheria, 106 from whooping-cough, 18 from enteric fever, and 12 from diarrhoea and dysentery. There were 413 deaths from diseases of the respiratory organs. Different forms of violence caused 53 deaths, and 5 suicides were registered. The deaths from all causes corresponded to an annual rate of 20.1 a thousand. In greater London 2,057 deaths were registered, corresponding to an annual rate of 19.8 a thousand of the population. In the "outer ring" 9 deaths from diphtheria, 18 from measles, 10 from scarlet fever, and 20 from whooping-cough were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended December 17 in the 16 principal town districts of Ireland was 33.1 a thousand of the population. The lowest rate was recorded in Newry, viz., 14.0, and the highest in Kilkenny, viz., 42.3 a thousand.

*Dublin.*—Two hundred and sixty-two deaths were registered during the week ended December 17, including 5 from measles, 3 from whooping-cough, 12 from scarlet fever, 1 from typhus, 1 from enteric fever, and 2 from diarrhoea. Diseases of the respiratory organs

caused 93 deaths. Three accidental deaths were registered, and in 37 instances the causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 37.7 a thousand.

*Scotland.*—The deaths registered in 8 principal towns during the week ended December 17 corresponded to an annual rate of 23.0 a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 16.4, and the highest in Paisley, viz., 35.0 a thousand. The aggregate number of deaths registered from all causes was 574, including 15 from measles, 9 from scarlet fever, 7 from diphtheria, 26 from whooping-cough, 9 from fever, and 9 from diarrhœa.

*Germany.*—The deaths registered in 53 cities of Germany, having an aggregate population of 6,831,222, during the week ended December 20 corresponded to an annual rate of 20.6 a thousand. The lowest rate was recorded in Cassel, viz., 9.5, and the highest in Münster, viz., 38.0.

*Athens.*—The United States consul, in his dispatch dated December 10, 1887, says: "I am informed by the Greek Government that the quarantine restrictions on arrivals from Malta, Messina in Sicily, and from the coasts of the Italian peninsula between Gaëta and Cotrone have been discontinued. Intercourse is now free with all ports and countries."

*Callao.*—The United States consul, in his dispatch dated November 28, 1887, states that "on the 26th instant a cable message was received by the government at Lima from the Peruvian consul at Valparaiso, announcing that several cases of cholera had appeared at that port. A decree was then issued by the President ordering that all Peruvian ports be closed to vessels proceeding from those of Chili, with the exception of such shipping touching only at Punta Arenas (Sandy Point) in the Straits of Magellan; and this ordinance is to be held in force until the construction of the lazaretto on the island of San Lorenzo, in this bay, be concluded, and it is possible to establish a strict quarantine in accordance with proper sanitary observances. The work on the lazaretto is being actively pushed under the supervision of the board of health."

*Santiago de Cuba.*—The United States consul reports, under date of December 24, 1887, that there are no new cases of small-pox, and yellow fever is declining at the military hospital. The harbor is completely free from contagious diseases.

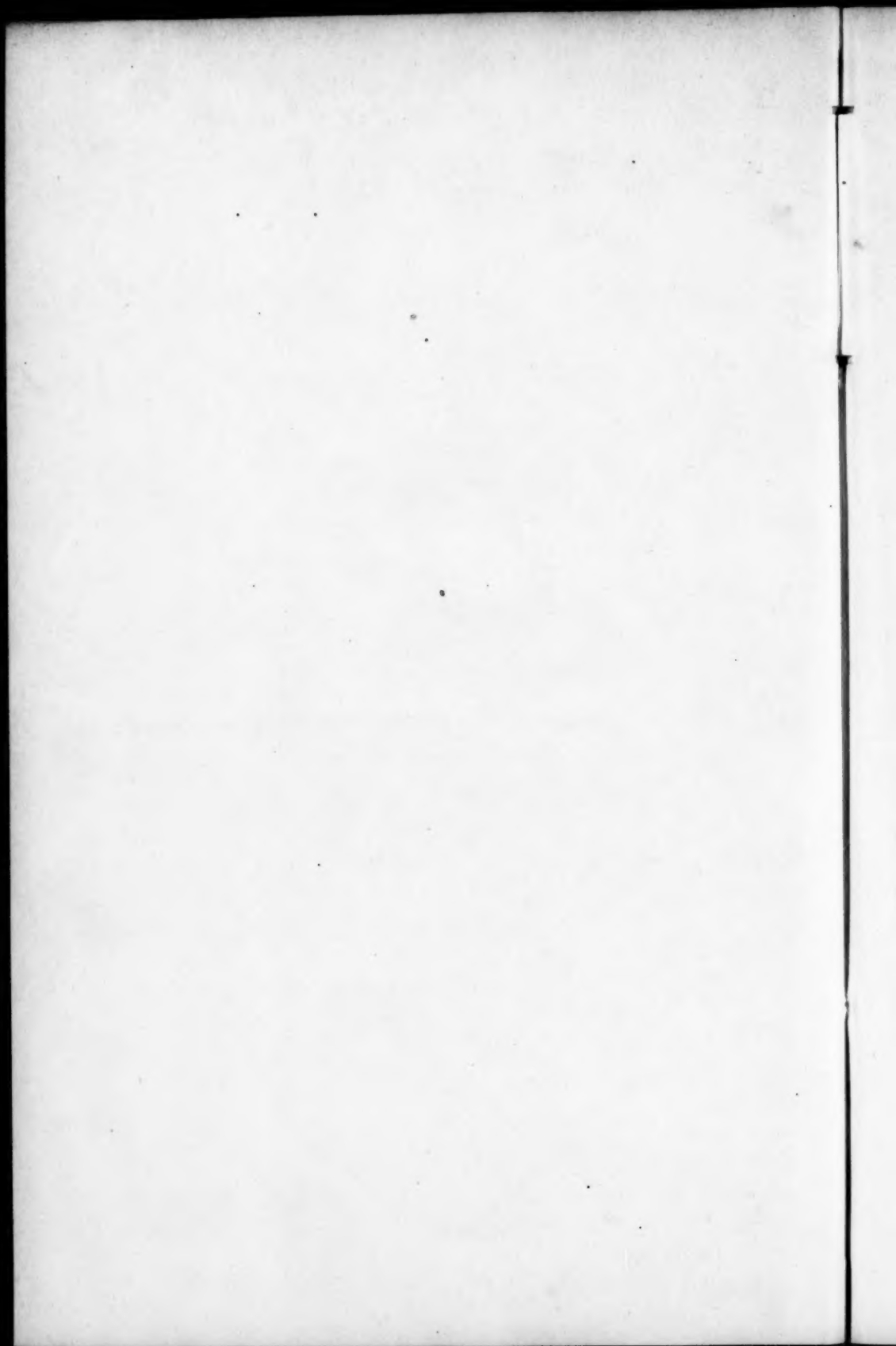
*Montevideo.*—There were 377 deaths registered during the month of October, 1887, including 30 from small-pox and 5 from fevers.

*Havana.*—The sanitary inspector reports for the week ended December 24, 1887, 3 deaths from yellow fever and 77 from small-pox.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris.....	December 17...	2,280,045	954	.....	.....	5	.....	49	6	33
Glasgow.....	December 17...	545,678	251	.....	.....	.....	.....	.....	4	3
Warsaw.....	December 10...	439,174	193	.....	.....	12	.....	.....	7	7
Calcutta.....	November 19...	433,219	249	11	.....	.....	.....	.....	.....	.....
Amsterdam.....	December 17...	378,686	163	.....	.....	.....	.....	.....	.....	4
Rome.....	November 19...	373,356	173	.....	.....	5	.....	3	2	1
Rome.....	November 26...	373,356	153	.....	.....	3	.....	2	.....	3
Copenhagen.....	December 6...	290,000	134	.....	.....	.....	.....	.....	8	9
Munich.....	December 3...	269,000	126	.....	.....	.....	.....	3	2	4
Edinburgh.....	December 17...	258,629	100	.....	.....	.....	2	.....	2	2
Palermo.....	December 18...	250,000	141	.....	.....	.....	.....	.....	4	13
Belfast.....	December 10...	224,422	136	.....	.....	.....	.....	3	3	.....
Belfast.....	December 17...	224,422	160	.....	.....	.....	.....	3	2	.....
Genoa.....	December 17...	179,534	100	.....	.....	5	.....	.....	.....	1
Leipsic.....	December 17...	170,000	64	.....	.....	.....	.....	.....	3	4
Martinique.....	December 17...	165,000	.....	.....	.....	20	.....	.....	.....	.....
Trieste.....	December 10...	150,157	80	.....	.....	10	.....	1	.....	2
Bremen.....	December 10...	119,000	56	.....	.....	.....	.....	.....	2	.....
Havre.....	December 18...	112,074	62	.....	.....	.....	.....	3	.....	.....
Leith.....	December 17...	72,297	23	.....	.....	.....	.....	1	.....	.....
Mayence.....	December 3...	65,701	20	.....	.....	.....	.....	.....	1	1
Mayence.....	December 10...	65,701	20	.....	.....	.....	.....	.....	.....	1
Cienfuegos.....	December 19...	35,464	34	.....	.....	24	.....	.....	.....	.....
Gibraltar.....	December 11...	23,621	9	.....	.....	1	.....	.....	.....	.....

JOHN B. HAMILTON,  
*Supervising Surgeon-General, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 2. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., January 13, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended January 13, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended December 24 in the 16 principal town districts of Ireland was 31.2 a thousand of the population. The lowest rate was recorded in Sligo, viz., 14.4, and the highest in Newry, viz., 59.7 a thousand.

*Dublin.*—One hundred and ninety-nine deaths were registered during the week ended December 24, including 3 from measles, 8 from whooping-cough, 4 from diphtheria, 4 from scarlet fever, 2 from typhus, 2 from enteric fever, 3 from diarrhœa, and 1 from dysentery. Diseases of the respiratory organs caused 43 deaths. Three accidental deaths were registered, and in 31 instances the causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 29.4 a thousand.

*Callao.*—The United States consul, in his dispatch dated December 9, 1887, states that "the latest report received by the Government here from Doctor Matto, sent officially to Chili to observe the progress made by the cholera, is to the following effect: 'Santiago, December 7, 1887. I have visited the lazarettos and sanitary establishments at Santiago. The epidemic is stationary. Sixty new cases; one third die. Treatment has happiest effect. At Valparaiso, 10 cases. An increase at Rancagua. At Concepcion, none.' The sanitary regulations established here, and stated in my recent dispatches, are rigorously observed. The lazaretto on San Lorenzo Island is approaching completion. Health of city and coast satisfactory."

*Havana.*—The sanitary inspector reports as follows, under date of January 3, 1888, that "there were 712 deaths in this city during the

month of December. Fifteen of those deaths were from yellow fever, 312 from small-pox; 3 from typhoid fever; 1 from bilious fever, 9 from so-called pernicious fever, and 3 from diphtheria. Small-pox has steadily increased since its commencement over eight months ago, and the above statement of deaths from it does not include the large mortality from said disease in the adjacent towns of Regla and Guanabacoa. I am informed that small-pox has been declared epidemic in Cardenas."

The same officer reports 8 deaths from yellow fever and 69 from small-pox during the week ending December 31, 1887.

*Buenos Ayres.*—One thousand and seventy-three deaths were registered during the month of October, 1887, including 80 from small-pox, 19 from enteric fever, 5 from scarlet fever, and 53 from diphtheria.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Warsaw.....	December 17...	439,174	240	.....	.....	10	.....	.....	9	6
Calcutta.....	November 26...	433,219	218	11	.....	.....	.....	.....	1	1
Copenhagen.....	December 13...	290,000	147	.....	.....	.....	.....	.....	9	6
Munich.....	December 10...	269,000	114	.....	.....	.....	.....	1	3	6
Munich.....	December 17...	269,000	131	.....	.....	.....	.....	1	4	7
Genoa.....	December 24...	179,503	115	.....	.....	.....	1	.....	.....	12
Trieste.....	December 17...	150,157	82	.....	8	.....	.....	.....	1	3
Stuttgart.....	December 24...	125,510	37	.....	.....	.....	.....	.....	.....	1
Bremen.....	December 17...	119,000	45	.....	.....	.....	.....	.....	1	2
Havre.....	December 24...	112,074	50	.....	.....	1	.....	4	.....	.....
Pernambuco.....	December 6...	110,000	45	.....	.....	.....	.....	1	.....	.....
Barmen.....	December 17...	108,000	38	.....	.....	.....	.....	.....	.....	1
Rheims.....	December 17...	97,903	50	.....	.....	.....	.....	2	1	1
Mayence.....	December 17...	65,701	35	.....	.....	.....	.....	.....	1	.....
Merida.....	December 13...	48,711	.....	.....	.....	.....	1	1	.....	.....
Merida.....	December 20...	48,711	18	.....	.....	.....	4	1	.....	.....
Merida.....	December 28...	48,711	18	.....	.....	.....	.....	.....	.....	4
Cienfuegos.....	December 26...	35,464	28	.....	.....	16	.....	.....	.....	.....

UNITED STATES.

*San Francisco, Cal.—Small-pox.*—The number of cases of small-pox in San Francisco during the year 1887 was 166, and during the period from January 1 to 5, 1888, there have been 25 cases. Of these, 14 were among the Chinese. The disease was brought to San Francisco early in May by one of the China steamers, but did not prevail to any extent until November. On December 29 the disease was declared to be epidemic by the board of health. All cases, on being verified, are immediately sent to the hospital, with their bedding and clothing; the premises are fumigated, and all persons living in the neighborhood are



vaccinated if possible. Vaccination offices have been opened in various parts of the city. No children are admitted to the public schools without having been previously vaccinated. Over thirty thousand vaccinations have been made at the office of the board of health during the past six months. Under the circumstances, the board of health is of the opinion that the disease will soon be stamped out.

*Port Townsend, Wash.*—Passed Assistant Surgeon S. C. Devan, M.-H. S., reports, under date of January 1, 1888, that because of the action of the Board of Health of San Francisco, Cal., in proclaiming the existence of small-pox as an epidemic in that city, the board of health at this port have issued instructions, under cover of date December 31, 1887, to their health officer to subject all vessels from the port of San Francisco to rigid examination. He also reports that there are three accredited cases of this disease at Seattle, Wash.

*Tampa, Fla.*—Dr. J. P. Wall reports that the rumors of the presence of yellow fever at Tampa are without foundation.

JOHN B. HAMILTON,  
*Supervising Surgeon-General, Marine-Hospital Service.*

• **Explain** the importance of the **business plan** in the start-up process.

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## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 3. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., January 20, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended January 13, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended December 31 corresponded to an annual rate of 24.8 a thousand of the aggregate population, which is estimated at 9,244,099. The lowest rate was recorded in Brighton, viz., 18.5, and the highest in Bolton, viz., 33.9 a thousand. Small-pox caused 24 deaths in Sheffield, 2 in Bristol, 1 in Leeds, and 1 in Hull.

For the week ended December 24, the deaths registered corresponded to an annual rate of 20.8 a thousand. The lowest rate was recorded in Derby, viz., 15.5, and the highest in Blackburn, viz., 31.7 a thousand. Small-pox caused 21 deaths in Sheffield, 2 in Bristol, and 1 in greater London.

*London.*—One thousand eight hundred and eighty-two deaths were registered during the week ended December 31, including 28 from measles; scarlet fever, 40; diphtheria, 22; whooping-cough, 130; enteric fever, 19; and diarrhoea and dysentery, 12. There were 442 deaths from diseases of the respiratory organs. Different forms of violence caused 74 deaths, and 3 suicides were registered. The deaths from all causes corresponded to an annual rate of 23.3 a thousand. In greater London 2,326 deaths were registered, corresponding to an annual rate of 22.4 a thousand of the population. In the "outer ring" 9 deaths from diphtheria; measles, 13; scarlet fever, 6; and whooping-cough, 20, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended December 31 in the 16 principal town districts of Ireland was 33.9 a thousand of the population. The low-

est rate was recorded in Lurgan, viz., 10.3, and the highest in Sligo, viz., 43.3 a thousand.

*Dublin.*—Two hundred and forty-five deaths were registered during the week ended December 31, including 1 from measles; whooping-cough, 3; scarlet fever, 6; diphtheria, 2; diarrhœa, 1; and dysentery, 1. Diseases of the respiratory organs caused 70 deaths. Four accidental deaths were registered, and in 41 instances the causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 36.2 a thousand.

*Scotland.*—The deaths registered in 8 principal towns during the week ended December 31 corresponded to an annual rate of 24.3 a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Perth, viz., 14.6, and the highest in Paisley, viz., 35.9 a thousand. The aggregate number of deaths registered from all causes was 607, including 14 from measles; scarlet fever, 7; diphtheria, 13; whooping-cough, 24; fever, 5; and diarrhœa, 10.

*Santiago, Chili.*—The United States minister, in his dispatch dated November 11, 1887, says: "Cholera has again made its appearance in Santiago. For the week ending November 5, 40 cases were reported as proving fatal, 19 on yesterday and 14 the day previous. It has extended to the south of Chili during the winter months, and has been particularly severe in some sections. It is the general impression that it will prove as destructive to life in Santiago and its environs as it was last summer, though the Government and people are much better prepared to meet it in a sanitary point of view."

*Cienfuegos.*—There were 76 deaths from small-pox during the month of December, 1887, and 188 cases were under treatment January 1, 1888.

*Havana.*—Five deaths from yellow fever and 71 from small-pox are reported for the week ended January 7.

## MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Glasgow .....	December 24...	545, 678	236	.....	.....	.....	.....	3	8	4
Glasgow .....	December 31...	545, 678	247	.....	.....	.....	.....	1	4	8
Warsaw .....	December 24...	439, 174	202	.....	.....	10	.....	.....	7	3
Calcutta .....	December 3...	433, 219	253	15	.....	.....	.....	.....	.....	1
Amsterdam .....	December 24...	378, 686	144	.....	.....	.....	.....	.....	.....	4
Amsterdam .....	December 31...	378, 686	156	.....	.....	.....	.....	1	1	2
Copenhagen .....	December 21...	290, 000	.....	.....	.....	.....	.....	1	5	7
Munich .....	December 24...	269, 000	130	.....	.....	.....	.....	.....	5	4
Edinburgh .....	December 31...	258, 629	107	.....	.....	.....	.....	1	2	2
Palermo .....	December 25...	250, 000	116	.....	.....	.....	.....	.....	1	11
Belfast .....	December 24...	224, 422	178	.....	.....	.....	.....	1	4	.....
Belfast .....	December 31...	224, 422	178	.....	.....	.....	.....	2	3	3
Bristol .....	December 24...	223, 695	96	.....	.....	1	.....	1	5	.....
Trieste .....	December 24...	154, 500	94	.....	.....	12	.....	.....	.....	2
Stuttgart .....	December 31...	125, 510	48	.....	.....	.....	.....	.....	.....	1
Pernambuco .....	December 20...	110, 000	65	.....	.....	1	.....	.....	.....	.....
Barmen .....	December 24...	108, 000	35	.....	.....	.....	1	.....	.....	3
Rheims .....	December 24...	97, 903	54	.....	.....	.....	.....	1	1	3
Leith .....	December 31...	72, 297	22	.....	.....	.....	.....	.....	.....	1
Cienfuegos .....	January 2...	35, 464	34	.....	1	25	.....	.....	.....	.....
Guayaquil .....	December 16...	30, 000	48	.....	.....	12	.....	.....	.....	.....
Guayaquil .....	December 22...	30, 000	52	.....	.....	11	.....	.....	.....	.....

## UNITED STATES.

*Florida.*—Dr. King Wylly, president of the Florida Health Protective Association, states, under date of January 16, 1888, that no yellow fever exists in Florida at present.

JOHN B. HAMILTON,  
*Supervising Surgeon-General, Marine-Hospital Service.*

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JOHN F. HARRIS  
Director

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 4. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., January 27, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended January 27, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended January 7 corresponded to an annual rate of 23.8 a thousand of the aggregate population, which is estimated at 9,244,099. The lowest rate was recorded in Brighton, viz., 14.8, and the highest in Plymouth, viz., 40.3 a thousand. Small-pox caused 27 deaths in Sheffield, 1 in Bristol, and 2 in Leeds.

*London.*—One thousand eight hundred and sixty-eight deaths were registered during the week ended January 7, including 25 from measles; scarlet fever, 37; diphtheria, 28; whooping-cough, 120; typhus, 1; enteric fever, 28; and diarrhoea and dysentery, 12. The deaths from all causes corresponded to an annual rate of 22.8 a thousand. In greater London 2,370 deaths were registered, corresponding to an annual rate of 22.4 a thousand of the population. In the "outer ring" 6 deaths from diphtheria; measles, 11; fever, 7; and whooping-cough, 45, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended January 7 in the 16 principal town districts of Ireland was 35.4 a thousand of the population. The lowest rate was recorded in Armagh, viz., 5.2, and the highest in Newry, viz., 45.7 a thousand.

*Dublin.*—Two hundred and sixty-one deaths were registered during the week ended January 7, including 2 from measles; whooping-cough, 9; scarlet fever, 9; enteric fever, 5; and diarrhoea, 6. Diseases of the respiratory organs caused 73 deaths. Seven accidental deaths, 1 suicide, and 1 homicide were registered, and in 34 instances the

causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 38.5 a thousand.

*Scotland.*—The deaths registered in 8 principal towns during the week ended January 7 corresponded to an annual rate of 27.1 a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 20.3, and the highest in Edinburgh, viz., 30.3 a thousand. The aggregate number of deaths registered from all causes was 685, including 2 from small-pox; measles, 23; scarlet fever, 7; diphtheria, 4; whooping-cough, 30; fever, 7; and diarrhoea, 18.

*Bordeaux.*—Six hundred and four deaths were registered during the month of December, 1887, including 102 from enteric fever.

*Santiago de Cuba.*—The sanitary inspector reports for the week ended January 14, 1888, that "no contagious diseases are prevalent just now. \* \* \* Small-pox prevails more or less in the country, and the cities of Havana, Matanzas, Cienfuegos, and Manzanillo are suffering from the variolous disease in an epidemic form."

*Havana.*—One death from yellow fever and 70 from small-pox are reported for the week ended January 14, 1888.

*Buenos Ayres.*—The United States minister, under date of December 12, 1887, transmits a copy of a convention recently signed by the Argentine, Brazilian, and Uruguayan commissioners, relating to the question of quarantine along the South American shores. The convention contains eight articles, the first four of which are as follows:

ART. 1. The contracting countries agree in declaring that: Exotic pestilential diseases are yellow fever, cholera-morbus, and the Eastern plague; and an infected port is one in which either of the said diseases exists as an epidemic; a suspicious port is one in which isolated cases of either of the said diseases are occurring, or one which is in easy and frequent communication with or is not sufficiently protected against infected ports. An infected ship is one in which a case of pestilential disease has occurred; a suspicious ship is one which, proceeding from an infected or suspicious port, has not had during the voyage any case of pestilential disease, or one which, though proceeding from a clean port, has touched at an infected or suspicious port, or one which, during its voyage or on its arrival, has communicated with another ship from an unknown, infected, or suspicious port, or one which has had deaths from an unascertained cause or repeated cases of any kind of disease, or one which does not bring a clean bill of health from the port from which it proceeded as well as from the ports of call, or one which, though it has undergone quarantine or received special sanitary treatment in either of the contracting countries, is not furnished with an international patent of free *pratique*. The declaration of a port being infected or suspicious shall be made by the government of the declarant country at the request of the chief of the maritime sanitary service, and shall be published officially.



ART. 2. The contracting countries shall establish adequate sanitary services, and the chiefs thereof shall communicate with each other upon all matters affecting the service. A code of international regulations shall be issued for establishing uniformity in the services.

ART. 3. The contracting countries shall establish such lazarettos as may be necessary, and they shall be placed upon islands; at least one floating lazaretto shall be established in case of an epidemic; floating hospitals shall be created in connection with the fixed lazarettos, to be used for the treatment of persons attacked by exotic pestilential diseases in the ships which may arrive or are already anchored; the quarantines and sanitary measures adopted in any lazaretto of either of the three countries shall be considered valid, for the purposes of this convention, provided they be officially certified; the ports shall not be closed against any ship, whatever may be her sanitary condition.

ART. 4. A ship proceeding from foreign ports shall not be put in free *pratique* without a previous sanitary visit. The visiting sanitary authority shall thoroughly investigate the sanitary condition of the ship, and shall decide on the treatment to be applied.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris .....	December 24...	2,260,045	951	.....	.....	6	.....	32	4	39
Paris .....	December 31...	2,260,045	1,070	.....	.....	3	.....	60	6	37
Paris .....	January 7.....	2,260,045	1,138	.....	.....	5	.....	33	3	48
Glasgow .....	January 7.....	545,678	273	.....	.....	1	.....	.....	2	1
Warsaw .....	December 31...	439,174	204	.....	.....	14	.....	.....	10	4
Calcutta .....	December 10...	433,219	260	17	.....	.....	.....	.....	.....	.....
Marseilles .....	December 31...	376,000	872	.....	4	.....	34	1	.....	66
Rome .....	December 31...	373,356	196	.....	4	.....	10	2	.....	2
Palermo .....	January 2.....	250,000	126	.....	.....	.....	2	.....	.....	2
Palermo .....	January 8.....	250,000	122	.....	.....	.....	.....	.....	.....	6
Belfast .....	January 7.....	224,422	161	.....	.....	.....	.....	.....	.....	1
Genoa .....	December 31...	179,493	109	.....	8	.....	1	.....	.....	1
Genoa .....	January 7.....	179,447	170	.....	8	.....	2	.....	.....	2
Leipsic .....	January 7.....	170,000	70	.....	.....	.....	.....	2	1	4
Trieste .....	December 31...	154,500	115	.....	.....	10	.....	.....	2	6
Toronto .....	January 14...	130,000	19	.....	.....	.....	.....	1	.....	4
Toronto .....	January 21...	130,000	29	.....	.....	.....	.....	.....	.....	1
Barmen .....	December 31...	108,000	39	.....	.....	.....	.....	.....	.....	1
Havre .....	December 31...	112,074	67	.....	.....	.....	.....	3	.....	1
Rheims .....	December 31...	97,903	57	.....	.....	.....	.....	1	1	4
Mayence .....	December 31...	65,701	39	.....	.....	.....	.....	.....	.....	3
Cienfuegos .....	January 9.....	35,464	29	.....	.....	21	.....	1	.....	.....
Cienfuegos .....	January 16...	35,464	54	.....	1	41	.....	.....	.....	.....
Gibraltar .....	January 1.....	23,631	11	.....	.....	.....	.....	.....	1	.....
Sagua La Grande .....	January 7.....	15,605	5	.....	.....	.....	4	.....	.....	.....

UNITED STATES.

San Francisco—Small-pox.—From January 1 to 17 there were 123 cases reported. The secretary of the health department reports as follows: "On the 14th instant the steamer 'Gaelic' arrived from Hong-Kong with small-pox on board, and seven Chinamen affected with the disease have been removed from her. The vessel will remain in quaran-

tine for some time. It is considered that the disease is decreasing already, and with the measures taken will soon be eradicated."

*Port Townsend, Wash.*—The Secretary of the Treasury, upon request of the local board of health, has authorized the revenue steamer "Walcott" to cruise between Port Townsend and Whidby Island, and, in connection with regular duties, notify vessels from San Francisco, where epidemic small-pox exists, to enter this port and comply with quarantine requirements before proceeding into interior.

*Key West.*—One case of small-pox is reported, under date of the 19th instant. The patient came from Havana about the first of the month. The usual precautions have been taken to prevent the spread of the disease.

JOHN B. HAMILTON,  
*Supervising Surgeon-General, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
              { No. 5. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., February 3, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended February 3, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended January 14 corresponded to an annual rate of 23.3 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Sunderland, viz., 14.2, and the highest in Manchester, viz., 34.9 a thousand. Small-pox caused 27 deaths in Sheffield, 1 in Bristol, 4 in Leeds, and 1 in London.

*London.*—One thousand nine hundred and forty deaths were registered during the week ended January 14, including 25 from measles; scarlet fever, 25; diphtheria, 16; whooping-cough, 152; enteric fever, 22; and diarrhoea and dysentery, 11. Diseases of the respiratory organs caused 579 deaths; different forms of violence, 69; and 11 suicides were registered. The deaths from all causes corresponded to an annual rate of 23.6 a thousand. In greater London 2,458 deaths were registered, corresponding to an annual rate of 23.2 a thousand of the population. In the "outer ring" 15 deaths from diphtheria; measles, 10; fever, 6; and whooping-cough, 37, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended January 14 in the 16 principal town districts of Ireland was 35.4 a thousand of the population. The lowest rate was recorded in Sligo, viz., 14.4, and the highest in Dundalk, viz., 48.0 a thousand.

*Dublin.*—Two hundred and forty-two deaths were registered during the week ended January 14, including 4 from measles; whooping-cough, 7; diphtheria, 2; scarlet fever, 10; typhus, 1; enteric fever, 4; diarrhoea, 3; and dysentery, 1. Diseases of the respiratory organs

caused 60 deaths. Six accidental deaths were registered, and in 43 instances the causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 35.7 a thousand.

*Scotland.*—The deaths registered in 8 principal towns during the week ended January 14 corresponded to an annual rate of 24.0 a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 10.8, and the highest in Paisley, viz., 31.2 a thousand. The aggregate number of deaths registered from all causes was 607, including 26 from measles; diphtheria, 8; whooping-cough, 26; fever, 8; and diarrhœa, 10.

*Hobart Town.*—Forty-six deaths were registered during the month of November, including 3 from enteric fever.

*Calcutta.*—One thousand and forty-one deaths were registered during the month of October, 1887, showing an annual ratio of 28.8 a thousand of the population. There were 73 deaths from cholera, against 47 in the preceding month.

*Havana.*—Two deaths from yellow fever and 57 from small-pox were reported for the week ended January 21, 1888.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—					
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.
Paris.....	January 14....	2,260,045	1,127	.....	.....	8	.....	33	4
Glasgow.....	January 14....	545,678	253	.....	.....	.....	.....	3	.....
Amsterdam.....	January 7....	389,916	180	.....	.....	.....	.....	.....	.....
Amsterdam.....	January 14....	389,916	215	.....	.....	.....	.....	.....	.....
Copenhagen.....	January 3....	230,000	158	.....	.....	.....	.....	.....	.....
Munich.....	December 31...	269,000	139	.....	.....	.....	.....	.....	.....
Munich.....	January 7....	269,000	147	.....	.....	.....	.....	1	.....
Palermo.....	January 15....	250,000	123	.....	.....	.....	.....	.....	.....
Genoa.....	January 14....	179,415	139	.....	.....	9	.....	.....	.....
Trieste.....	January 14....	170,000	44	.....	.....	.....	.....	1	.....
Trieste.....	January 7....	154,500	105	.....	.....	7	.....	1	.....
Bremen.....	January 7....	122,000	48	.....	.....	.....	.....	.....	.....
Havre.....	January 7....	112,074	64	.....	.....	1	.....	3	.....
Mayence.....	January 7....	65,701	27	.....	.....	.....	.....	.....	.....
Merida.....	January 16....	48,711	16	.....	.....	.....	.....	2	.....

## UNITED STATES.

*New York.*—The following is a report of an analysis of the water of New York Bay, by Assistant Surgeon J. J. Kinyoun, Marine-Hospital Service:

The cities and towns discharging their sewage into the New York Bay have an estimated population of 3,000,000 of people. In view of

this fact, a chemical and biological examination of the bay water was undertaken, for the purpose of determining its contents, and also to find how long it would support life of the different micro-organisms, more especially that of Asiatic cholera. Accordingly, specimens were obtained at different places, being collected in sterilized flasks. The first was obtained at the Narrows; the second alongside the steamship *Britannia* (lying in quarantine); the third at Hoffman's Island, and the fourth at Swinburne Island. These different specimens were collected within thirty minutes, and just at incoming tide.

Chemical examination of one liter:

Narrows—	
Chloride of potash and soda.....	20.8 grams.
Carbonates.....	A trace.
Iodine.....	A trace.
Free ammonia.....	A trace.
Albuminoid ammonia.....	158 gram.
Steamship <i>Britannia</i> —	
Chloride of potash and soda.....	20.82 grams.
Carbonates.....	A trace.
Iodine.....	A trace.
Free ammonia.....	A trace.
Albuminoid ammonia.....	158 gram.
Hoffman's Island—	
Chloride of potash and soda.....	21.64 grams.
Carbonates.....	A trace.
Iodine.....	A trace.
Free ammonia.....	A trace.
Albuminoid ammonia.....	158 gram.
Swinburne Island—	
Chloride of potash and soda.....	21.814 grams.
Carbonates.....	A trace.
Iodine.....	A trace.
Free ammonia.....	A trace.
Albuminoid ammonia.....	158 gram.
Reaction was slightly alkaline.	

Plate cultivations were made from each of the different specimens, and at the end of five days had developed colonies of bacteria. Examination showing the number of micro-organisms:

Narrows.....	4,500 to cubic centimeter.
<i>Britannia</i> anchorage.....	10,200 to cubic centimeter.
Hoffman Island.....	9,600 to cubic centimeter.
Swinburne Island.....	11,700 to cubic centimeter.

The micro-organisms found in each were several varieties of micrococci and one of a large bacillus. These were transferred to cultivation-tubes for further observation. On November 12, test-tubes, partly filled with sea-water, were thoroughly sterilized and inoculated in the usual manner, with pure cultivations of the spirilla of Asiatic cholera, and also of Finkler and Prior. Cultivation-tubes were inoculated from the water from day to day for the purpose of determining the longevity of the growths. During the first five days the water seemed to exert a slight inhibitory influence over their development. It was further observed that until January 20, a period of sixty-nine days, the characteristic growth of the spirillum of cholera Asiatica could be produced in peptone gelatine. That of Finkler and Prior has a yet longer lease of life.

Examinations made from time to time, both by the plate method and direct staining, show conclusively that these spirilla have not only been kept alive, but have also greatly increased in numbers.

After closely studying the currents of the upper bay, I am led to believe that if dejecta from cholera patients should be thrown into the lower bay, cholera could gain a foothold on the contiguous shores, where every condition favorable to its development and propagation sometimes exists.

JOHN B. HAMILTON,  
*Supervising Surgeon-General, Marine-Hospital Service.*

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 6. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., February 10, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended February 10, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended January 21 corresponded to an annual rate of 23.0 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 17.0, and the highest in Portsmouth, viz., 28.8 a thousand. Small-pox caused 25 deaths in Sheffield, 3 in Bristol, and 2 in Nottingham.

*London.*—Two thousand deaths were registered during the week ended January 21, including 14 from measles; scarlet fever, 42; diphtheria, 22; whooping-cough, 138; enteric fever, 26; and diarrhœa and dysentery, 15. Diseases of the respiratory organs caused 591 deaths; different forms of violence, 78; and 10 suicides were registered. The deaths from all causes corresponded to an annual rate of 24.4 a thousand. In greater London 2,512 deaths were registered, corresponding to an annual rate of 23.7 a thousand of the population. In the "outer ring" 11 deaths from diphtheria; measles, 8; and whooping-cough, 39, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended January 21 in the 16 principal town districts of Ireland was 31.4 a thousand of the population. The lowest rate was recorded in Armagh, viz., 10.3, and the highest in Sligo, viz., 72.2 a thousand. In Dublin 216 deaths were registered, including 2 from measles; whooping-cough, 5; diphtheria, 3; scarlet fever, 7; typhus, 1; enteric fever, 6; diarrhœa, 3; and dysentery, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week ended January 21 corresponded to an annual rate of 23.3 a thousand



of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 17.5, and the highest in Dundee, viz., 26.5 a thousand. The aggregate number of deaths registered from all causes was 588, including 15 from measles; diphtheria, 5; scarlet fever, 3; whooping-cough, 24; fever, 6; and diarrhoea, 13.

*Lima.*—The United States minister states, under date of January 5, 1888, "that on the 2d day of January the Sanitary Congress met under the auspices of the Minister of Foreign Relations, and was officially installed, there being present, for Peru, Dr. Francisco Rosas, Dr. José Mariano Maceao, Dr. Lino Alarco; for Ecuador, Dr. Celso Bambarén; for Bolivia, Dr. Julio Rodriguez and Dr. Andrés S. Muñoz. Secretary, Dr. Picardo Pimentel, of Ecuador." The minister also transmits a translation of a cutting from *El Comercio*, Lima, January 4, relative to the cholera in Valparaiso, as follows:

**CHOLERA.**—Though we have no official telegram upon the state of the epidemic in Chili, we know of a telegraphic dispatch received by private persons from Valparaiso stating that *the flail* is making many victims, and has reached up to 130 cases daily, deaths being from 80 to 90.

*Buenos Ayres.*—One thousand two hundred and thirty-six deaths were registered during the month of November, 1887, including 99 from small-pox; enteric fever, 23; scarlet fever, 2; and diphtheria, 62.

*Montevideo.*—Three hundred and sixty-eight deaths were registered during the month of November, 1887, including 29 from small-pox and 6 from enteric fever.

*Merida.*—The United States consul reports that pellagra is prevalent among the Indians, and that 9 deaths from that disease occurred during the week ended January 23, 1888.

*Santiago de Cuba.*—The sanitary inspector reports for the week ended January 28, 1888, that "no contagious diseases have appeared this week, excepting one case of yellow fever, \* \* \* ending fatally at the military hospital. No small-pox cases have been reported, and the sanitary condition of both the city and port is excellent."

*Havana.*—Seven hundred and sixty-five deaths were registered during the month of January, 1888, including 9 from yellow fever; small-pox, 269; enteric fever, 12; diphtheria, 7; scarlet fever, 1; hydrophobia, 1; so-called pernicious fever, 11.

## MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris .....	January 21.....	2,260,045	1,167	.....	.....	6	.....	37	4	39
Glasgow .....	January 21.....	526,088	235	.....	.....	.....	.....	2	1	3
Warsaw .....	January 7.....	439,174	249	.....	.....	11	.....	.....	9	3
Warsaw .....	January 14.....	439,174	219	.....	.....	5	.....	.....	3	3
Rome .....	December 10.....	373,356	173	.....	.....	9	.....	2	.....	3
Rome .....	December 17.....	373,356	170	.....	.....	4	.....	1	1	1
Rome .....	December 24.....	373,356	217	.....	.....	5	.....	3	.....	3
Copenhagen.....	January 10.....	300,000	152	.....	.....	.....	.....	1	.....	4
Munich .....	January 14.....	275,000	146	.....	.....	.....	.....	.....	1	5
Edinburgh.....	January 21.....	262,733	120	.....	.....	.....	.....	2	1	1
Palermo.....	January 22.....	250,000	143	.....	.....	.....	.....	.....	2	5
Bristol.....	January 14.....	226,510	105	.....	.....	.....	.....	1	5	.....
Belfast .....	January 21.....	224,422	151	.....	.....	.....	.....	4	2	.....
Toronto .....	January 28.....	130,000	24	.....	.....	.....	.....	.....	.....	6
Stuttgart.....	January 21.....	125,510	42	.....	.....	.....	1	.....	.....	.....
Bremen .....	January 14.....	122,000	46	.....	.....	.....	.....	.....	.....	2
Barmen .....	January 14.....	109,000	56	.....	.....	.....	.....	.....	.....	1
Leith .....	January 21.....	74,320	25	.....	.....	.....	.....	.....	.....	1
Mayence.....	January 14.....	65,701	39	.....	.....	.....	1	.....	.....	1
Cienfuegos.....	January 23.....	35,464	30	.....	.....	20	.....	1	.....	.....
Guayaquil.....	January 7.....	30,000	72	.....	8	22	.....	16	.....	.....
Guayaquil.....	January 14.....	30,000	64	.....	2	18	.....	21	.....	.....
Sagua .....	January 14.....	15,605	8	.....	.....	3	.....	.....	.....	.....
Sagua .....	January 21.....	15,605	11	.....	.....	5	.....	.....	.....	.....

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*

THEORY OF THE EARTH

TABLE I. - THE EARTH'S CRUST AND MANTLE.									
Depth (miles)	Temperature (°C)	Pressure (atmospheres)	Specific Gravity	Composition	State	Thickness (miles)	Volume (cubic miles)	Mass (trillion tons)	Notes
0	15	1	2.7	Granite	Solid	0-10	1,000,000	10,000	Continental crust
10	200	10	2.8	Gabbro	Solid	10-40	1,000,000	10,000	Oceanic crust
40	500	40	3.3	Mylonite	Solid	40-60	1,000,000	10,000	Continental crust
60	700	60	3.5	Basalt	Solid	60-80	1,000,000	10,000	Oceanic crust
80	900	80	3.6	Granite	Solid	80-100	1,000,000	10,000	Continental crust
100	1100	100	3.7	Gabbro	Solid	100-120	1,000,000	10,000	Oceanic crust
120	1300	120	3.8	Mylonite	Solid	120-140	1,000,000	10,000	Continental crust
140	1500	140	3.9	Basalt	Solid	140-160	1,000,000	10,000	Oceanic crust
160	1700	160	4.0	Granite	Solid	160-180	1,000,000	10,000	Continental crust
180	1900	180	4.1	Gabbro	Solid	180-200	1,000,000	10,000	Oceanic crust
200	2100	200	4.2	Mylonite	Solid	200-220	1,000,000	10,000	Continental crust
220	2300	220	4.3	Basalt	Solid	220-240	1,000,000	10,000	Oceanic crust
240	2500	240	4.4	Granite	Solid	240-260	1,000,000	10,000	Continental crust
260	2700	260	4.5	Gabbro	Solid	260-280	1,000,000	10,000	Oceanic crust
280	2900	280	4.6	Mylonite	Solid	280-300	1,000,000	10,000	Continental crust
300	3100	300	4.7	Basalt	Solid	300-320	1,000,000	10,000	Oceanic crust
320	3300	320	4.8	Granite	Solid	320-340	1,000,000	10,000	Continental crust
340	3500	340	4.9	Gabbro	Solid	340-360	1,000,000	10,000	Oceanic crust
360	3700	360	5.0	Mylonite	Solid	360-380	1,000,000	10,000	Continental crust
380	3900	380	5.1	Basalt	Solid	380-400	1,000,000	10,000	Oceanic crust
400	4100	400	5.2	Granite	Solid	400-420	1,000,000	10,000	Continental crust
420	4300	420	5.3	Gabbro	Solid	420-440	1,000,000	10,000	Oceanic crust
440	4500	440	5.4	Mylonite	Solid	440-460	1,000,000	10,000	Continental crust
460	4700	460	5.5	Basalt	Solid	460-480	1,000,000	10,000	Oceanic crust
480	4900	480	5.6	Granite	Solid	480-500	1,000,000	10,000	Continental crust
500	5100	500	5.7	Gabbro	Solid	500-520	1,000,000	10,000	Oceanic crust
520	5300	520	5.8	Mylonite	Solid	520-540	1,000,000	10,000	Continental crust
540	5500	540	5.9	Basalt	Solid	540-560	1,000,000	10,000	Oceanic crust
560	5700	560	6.0	Granite	Solid	560-580	1,000,000	10,000	Continental crust
580	5900	580	6.1	Gabbro	Solid	580-600	1,000,000	10,000	Oceanic crust
600	6100	600	6.2	Mylonite	Solid	600-620	1,000,000	10,000	Continental crust
620	6300	620	6.3	Basalt	Solid	620-640	1,000,000	10,000	Oceanic crust
640	6500	640	6.4	Granite	Solid	640-660	1,000,000	10,000	Continental crust
660	6700	660	6.5	Gabbro	Solid	660-680	1,000,000	10,000	Oceanic crust
680	6900	680	6.6	Mylonite	Solid	680-700	1,000,000	10,000	Continental crust
700	7100	700	6.7	Basalt	Solid	700-720	1,000,000	10,000	Oceanic crust
720	7300	720	6.8	Granite	Solid	720-740	1,000,000	10,000	Continental crust
740	7500	740	6.9	Gabbro	Solid	740-760	1,000,000	10,000	Oceanic crust
760	7700	760	7.0	Mylonite	Solid	760-780	1,000,000	10,000	Continental crust
780	7900	780	7.1	Basalt	Solid	780-800	1,000,000	10,000	Oceanic crust
800	8100	800	7.2	Granite	Solid	800-820	1,000,000	10,000	Continental crust
820	8300	820	7.3	Gabbro	Solid	820-840	1,000,000	10,000	Oceanic crust
840	8500	840	7.4	Mylonite	Solid	840-860	1,000,000	10,000	Continental crust
860	8700	860	7.5	Basalt	Solid	860-880	1,000,000	10,000	Oceanic crust
880	8900	880	7.6	Granite	Solid	880-900	1,000,000	10,000	Continental crust
900	9100	900	7.7	Gabbro	Solid	900-920	1,000,000	10,000	Oceanic crust
920	9300	920	7.8	Mylonite	Solid	920-940	1,000,000	10,000	Continental crust
940	9500	940	7.9	Basalt	Solid	940-960	1,000,000	10,000	Oceanic crust
960	9700	960	8.0	Granite	Solid	960-980	1,000,000	10,000	Continental crust
980	9900	980	8.1	Gabbro	Solid	980-1000	1,000,000	10,000	Oceanic crust
1000	10100	1000	8.2	Mylonite	Solid	1000-1020	1,000,000	10,000	Continental crust
1020	10300	1020	8.3	Basalt	Solid	1020-1040	1,000,000	10,000	Oceanic crust
1040	10500	1040	8.4	Granite	Solid	1040-1060	1,000,000	10,000	Continental crust
1060	10700	1060	8.5	Gabbro	Solid	1060-1080	1,000,000	10,000	Oceanic crust
1080	10900	1080	8.6	Mylonite	Solid	1080-1100	1,000,000	10,000	Continental crust
1100	11100	1100	8.7	Basalt	Solid	1100-1120	1,000,000	10,000	Oceanic crust
1120	11300	1120	8.8	Granite	Solid	1120-1140	1,000,000	10,000	Continental crust
1140	11500	1140	8.9	Gabbro	Solid	1140-1160	1,000,000	10,000	Oceanic crust
1160	11700	1160	9.0	Mylonite	Solid	1160-1180	1,000,000	10,000	Continental crust
1180	11900	1180	9.1	Basalt	Solid	1180-1200	1,000,000	10,000	Oceanic crust
1200	12100	1200	9.2	Granite	Solid	1200-1220	1,000,000	10,000	Continental crust
1220	12300	1220	9.3	Gabbro	Solid	1220-1240	1,000,000	10,000	Oceanic crust
1240	12500	1240	9.4	Mylonite	Solid	1240-1260	1,000,000	10,000	Continental crust
1260	12700	1260	9.5	Basalt	Solid	1260-1280	1,000,000	10,000	Oceanic crust
1280	12900	1280	9.6	Granite	Solid	1280-1300	1,000,000	10,000	Continental crust
1300	13100	1300	9.7	Gabbro	Solid	1300-1320	1,000,000	10,000	Oceanic crust
1320	13300	1320	9.8	Mylonite	Solid	1320-1340	1,000,000	10,000	Continental crust
1340	13500	1340	9.9	Basalt	Solid	1340-1360	1,000,000	10,000	Oceanic crust
1360	13700	1360	10.0	Granite	Solid	1360-1380	1,000,000	10,000	Continental crust
1380	13900	1380	10.1	Gabbro	Solid	1380-1400	1,000,000	10,000	Oceanic crust
1400	14100	1400	10.2	Mylonite	Solid	1400-1420	1,000,000	10,000	Continental crust
1420	14300	1420	10.3	Basalt	Solid	1420-1440	1,000,000	10,000	Oceanic crust
1440	14500	1440	10.4	Granite	Solid	1440-1460	1,000,000	10,000	Continental crust
1460	14700	1460	10.5	Gabbro	Solid	1460-1480	1,000,000	10,000	Oceanic crust
1480	14900	1480	10.6	Mylonite	Solid	1480-1500	1,000,000	10,000	Continental crust
1500	15100	1500	10.7	Basalt	Solid	1500-1520	1,000,000	10,000	Oceanic crust
1520	15300	1520	10.8	Granite	Solid	1520-1540	1,000,000	10,000	Continental crust
1540	15500	1540	10.9	Gabbro	Solid	1540-1560	1,000,000	10,000	Oceanic crust
1560	15700	1560	11.0	Mylonite	Solid	1560-1580	1,000,000	10,000	Continental crust
1580	15900	1580	11.1	Basalt	Solid	1580-1600	1,000,000	10,000	Oceanic crust
1600	16100	1600	11.2	Granite	Solid	1600-1620	1,000,000	10,000	Continental crust
1620	16300	1620	11.3	Gabbro	Solid	1620-1640	1,000,000	10,000	Oceanic crust
1640	16500	1640	11.4	Mylonite	Solid	1640-1660	1,000,000	10,000	Continental crust
1660	16700	1660	11.5	Basalt	Solid	1660-1680	1,000,000	10,000	Oceanic crust
1680	16900	1680	11.6	Granite	Solid	1680-1700	1,000,000	10,000	Continental crust
1700	17100	1700	11.7	Gabbro	Solid	1700-1720	1,000,000	10,000	Oceanic crust
1720	17300	1720	11.8	Mylonite	Solid	1720-1740	1,000,000	10,000	Continental crust
1740	17500	1740	11.9	Basalt	Solid	1740-1760	1,000,000	10,000	Oceanic crust
1760	17700	1760	12.0	Granite	Solid	1760-1780	1,000,000	10,000	Continental crust
1780	17900	1780	12.1	Gabbro	Solid	1780-1800	1,000,000	10,000	Oceanic crust
1800	18100	1800	12.2	Mylonite	Solid	1800-1820	1,000,000	10,000	Continental crust
1820	18300	1820	12.3	Basalt	Solid	1820-1840	1,000,000	10,000	Oceanic crust
1840	18500	1840	12.4	Granite	Solid	1840-1860	1,000,000	10,000	Continental crust
1860	18700	1860	12.5	Gabbro	Solid	1860-1880	1,000,000	10,000	Oceanic crust
1880	18900	1880	12.6	Mylonite	Solid	1880-1900	1,000,000	10,000	Continental crust
1900	19100	1900	12.7	Basalt	Solid	1900-1920	1,000,000	10,000	Oceanic crust
1920	19300	1920	12.8	Granite	Solid	1920-1940	1,000,000	10,000	Continental crust
1940	19500	1940	12.9	Gabbro	Solid	1940-1960	1,000,000	10,000	Oceanic crust
1960	19700	1960	13.0	Mylonite	Solid	1960-1980	1,000,000	10,000	Continental crust
1980	19900	1980	13.1	Basalt	Solid	1980-2000	1,000,000	10,000	Oceanic crust
2000	20100	2000	13.2	Granite	Solid	2000-2020	1,000,000	10,000	Continental crust
2020	20300	2020	13.3	Gabbro	Solid	2020-2040	1,000,000	10,000	Oceanic crust
2040	20500	2040	13.4	Mylonite	Solid	2040-2060	1,000,000	10,000	Continental crust
2060	20700	2060	13.5	Basalt	Solid	2060-2080	1,000,000	10,000	Oceanic crust
2080	20900	2080	13.6	Granite	Solid	2080-2100	1,000,000	10,000	Continental crust
2100	21100	2100	13.7	Gabbro	Solid	2100-2120	1,000,000	10,000	Oceanic crust
2120	21300	2120	13.8	Mylonite	Solid	2120-2140	1,000,000	10,000	Continental crust
2140	21500	2140	13.9	Basalt	Solid	2140-2160	1,000,000	10,000	Oceanic crust
2160	21700	2160	14.0	Granite	Solid	2160-2180	1,000,000	10,000	Continental crust
2180	21900	2180	14.1	Gabbro	Solid	2180-2200	1,000,000	10,000	Oceanic crust
2200	22100	2200	14.2	Mylonite	Solid	2200-2220	1,000,000	10,000	Continental crust
2220	22300	2220	14.3	Basalt	Solid	2220-2240	1,000,000	10,000	Oceanic crust
2240	22500	2240	14.4	Granite	Solid	2240-2260	1,000,000	10,000	Continental crust
2260	22700	2260	14.5	Gabbro	Solid	2260-2280	1,000,000	10,000	Oceanic crust
2280	22900	2280	14.6	Mylonite	Solid	2280-2300	1,000,000	10,000	Continental crust
2300	23100	2300	14.7	Basalt	Solid	2300-2320	1,000,000	10,000	Oceanic crust
2320	23300	2320	14.8	Granite	Solid	2320-2340	1,000,000	10,000	Continental crust
2340	23500	2340	14.9	Gabbro	Solid	2340-2360	1,000,000	10,000	Oceanic crust
2360	23700	2360	15.0	Mylonite	Solid	2360-2380	1,000,000	10,000	Continental crust
2380	23900	2380	15.1	Basalt	Solid	2380-2400	1,000,000	10,000	Oceanic crust
2400	24100	2400	15.2	Granite	Solid	2400-2420	1,000,000	10,000	Continental crust
2420	24300	2420	15.3	Gabbro	Solid	2420-2440	1,000,000	10,000	Oceanic crust
2440	24500	2440	15.4	Mylonite	Solid	2440-2460	1,000,000	10,000	Continental crust
2460									



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 7. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., February 17, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended February 17, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended January 28 corresponded to an annual rate of 22.5 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 14.3, and the highest in Manchester, viz., 31.9 a thousand. Small-pox caused 37 deaths in Sheffield, 1 in Bristol, and 1 in Leeds.

During the year 1887, 530,577 deaths were registered, corresponding to an annual death-rate of 18.8 a thousand of the estimated population. The deaths from all causes included, small-pox, 505; diphtheria, 4,339; fever (typhus, enteric, simple, and ill-defined), 5,653; scarlet fever, 7,719; whooping-cough, 10,661; measles, 16,297; diarrhoea, 19,502.

*London.*—One thousand eight hundred and sixteen deaths were registered during the week ended January 28, including 16 from measles; scarlet fever, 29; diphtheria, 29; whooping-cough, 168; enteric fever, 13; and diarrhoea and dysentery, 11. Diseases of the respiratory organs caused 534 deaths; different forms of violence, 59; and 3 suicides were registered. The deaths from all causes corresponded to an annual rate of 22.1 a thousand. In greater London 2,298 deaths were registered, corresponding to an annual rate of 21.7 a thousand of the population. In the "outer ring" 15 deaths from diphtheria and 74 from whooping-cough were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended January 28 in the 16 principal town districts of Ireland was 30.9 a thousand of the population. The lowest rate was recorded in Sligo, viz., 4.8, and the highest in Cork,

viz., 47.4 a thousand. In Dublin 224 deaths were registered, including 2 from measles; whooping-cough, 8; diphtheria, 6; scarlet fever, 10; typhus, 1; enteric fever, 2; diarrhœa, 3; and erysipelas, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week ended January 28 corresponded to an annual rate of 22.4 a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 12.8, and the highest in Perth, viz., 25.6 a thousand. The aggregate number of deaths registered from all causes was 567, including 10 from measles; diphtheria, 9; scarlet fever, 7; whooping-cough, 22; fever, 8; and diarrhœa, 13.

*Callao.*—The following is a copy of a dispatch received from the United States consul, under date of January 14, 1888:

The last cable message from Doctor Matto, the medical representative of Peru now in Chili, is to the effect that cholera is decreasing both at Santiago and Valparaiso, and its course is still proceeding to the southward. From the 15th of December to the 1st instant there were 1,288 cases of cholera in the Valparaiso hospitals, of which 644, or exactly 50 per cent., terminated fatally. Doctor Puga-Bonne, the Chilean delegate to the Sanitary Congress at Lima, has arrived, and the deliberations of that body, under the presidency of Doctor Rosas, one of the Peruvian representatives, are being continued. As yet regulations to govern the proceedings have alone been considered. The health of this port and of Lima is satisfactory.

*Cayenne.*—The United States consul, in his dispatch dated January 16, 1888, states that "yellow fever was declared here on the 9th January, instant, by the board of health, and that foul bills of health are now issued."

*Santiago de Cuba.*—The sanitary inspector reports for the week ended February 4, 1888, that "the sanitary condition of the town has been excellent. No contagious diseases have been reported. Small-pox has completely disappeared from the country, where it was causing some ravages. Yellow fever still exists at the military hospital among the newly-arrived recruits, 3 cases and 5 deaths having been reported.

*Havana.*—Two deaths from yellow fever and 57 from small-pox are reported for the week ended February 4, 1888.

MORTALITY TABLE, FOREIGN CITIES.

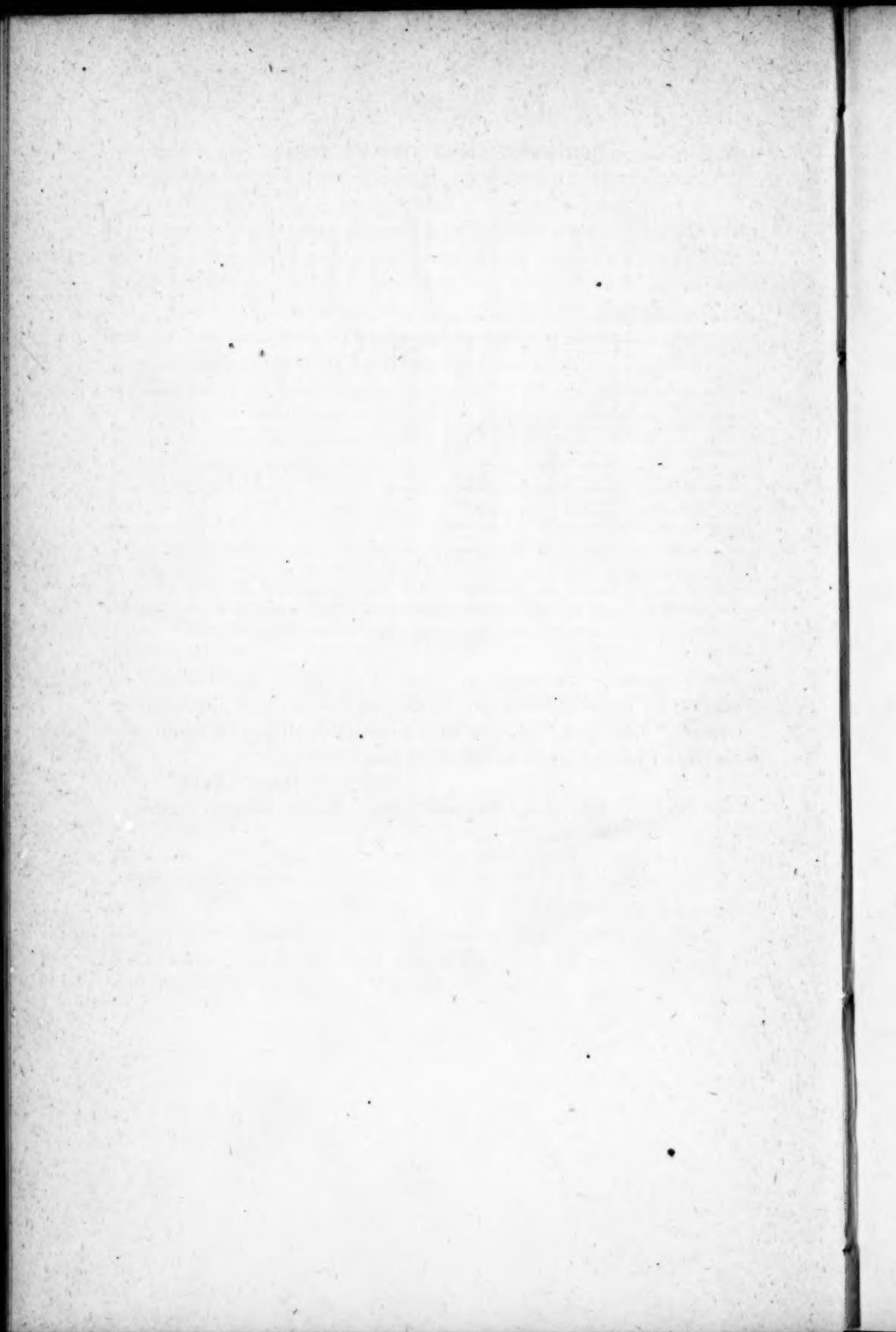
Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris.....	January 28....	2,260,945	1,153	.....	.....	12	.....	23	6	47
Glasgow.....	January 28....	545,678	234	.....	.....	.....	.....	5	1	4
Warsaw.....	January 21....	439,174	188	.....	.....	6	.....	.....	2	.....
Calcutta.....	December 17....	433,219	229	20	.....	.....	.....	.....	.....	.....
Calcutta.....	December 24....	433,219	257	16	.....	.....	.....	.....	.....	.....
Calcutta.....	December 31....	433,219	244	17	.....	.....	.....	.....	.....	.....
Amsterdam ..	January 28....	389,916	183	.....	.....	.....	.....	2	.....	2
Copenhagen....	January 24....	300,000	146	.....	.....	.....	.....	.....	1	10
Munich.....	January 24....	275,000	142	.....	.....	.....	.....	2	.....	5
Edinburgh.....	January 28....	258,629	113	.....	.....	.....	.....	1	.....	2
Palermo.....	January 29....	250,000	164	.....	.....	.....	.....	.....	2	4
Belfast.....	January 28....	224,422	129	.....	.....	.....	.....	2	1	2
Geneva.....	January 28....	179,390	141	.....	.....	9	.....	.....	.....	1
Leipsic.....	January 28....	170,000	73	.....	.....	.....	.....	1	2	4
Trieste.....	January 21....	154,500	112	.....	.....	9	.....	1	2	5
Toronto.....	February 11....	130,000	37	.....	.....	.....	.....	.....	.....	4
Havre.....	January 28....	112,074	69	.....	.....	3	.....	.....	.....	1
Barmen.....	January 28....	109,000	48	.....	.....	.....	1	.....	.....	2
Rheims.....	January 21....	97,903	53	.....	.....	1	.....	.....	.....	7
Mayence.....	January 21....	65,701	42	.....	.....	.....	.....	.....	1	1
Gibraltar.....	January 22....	23,631	11	.....	.....	.....	.....	.....	1	1

## UNITED STATES.

*Port Townsend.*—The medical officer in charge of the Marine-Hospital Service reports, under date of the 5th instant, that the schooner "Courser," from San Francisco with a case of small-pox on board, has been placed in quarantine by the local board of health.

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 8. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., February 24, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended February 24, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended February 4 corresponded to an annual rate of 21.9 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bradford, viz., 13.4, and the highest in Plymouth, viz., 32.2 a thousand. Small-pox caused 17 deaths in Sheffield, 1 in Bristol, and 1 in Leeds.

*London.*—One thousand eight hundred and ninety-four deaths were registered during the week, including 18 from measles; scarlet fever, 38; diphtheria, 29; whooping-cough, 177; enteric fever, 26; and diarrhoea and dysentery, 15. Diseases of the respiratory organs caused 516 deaths; different forms of violence, 55; and 5 suicides were registered. The deaths from all causes corresponded to an annual rate of 23.1 a thousand. In greater London 2,370 deaths were registered, corresponding to an annual rate of 22.4 a thousand of the population. In the "outer ring" 10 deaths from diphtheria and 41 from whooping-cough were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended February 4 in the 16 principal town districts of Ireland was 29.5 a thousand of the population. The lowest rate was recorded in Londonderry, viz., 7.1, and the highest in Cork, viz., 40.2 a thousand. In Dublin 202 deaths were registered, including 2 from measles; whooping-cough, 10; scarlet fever, 6; enteric fever, 4; diarrhoea, 1; and dysentery, 2.



*Netherlands.*—The deaths registered in the principal cities of the Netherlands, having an aggregate population of 1,102,200, during the month of December, 1887, corresponded to an annual rate of 22.1 a thousand. The lowest rate was recorded in Groningen, viz., 16.6, and the highest in Haarlem, viz., 24.8 a thousand.

*Santiago de Cuba.*—The sanitary inspector reports, for the week ended February 11, 1 death from yellow fever at the military hospital, and that small-pox has broken out again at the village of Cristo, eight miles from that city.

*Havana.*—One death from yellow fever and 38 from small-pox are reported for the week ended February 11, 1888.

*Berlin.*—The United States minister, in his dispatch under date of January 30, transmits copies and translations of two articles taken from Berlin newspapers containing reports, which have not been contradicted, of further alarming outbreaks of trichinosis in that country. The articles referred to are as follows:

*Görlitz, January 23.*—Trichinosis has continued to spread in the Saxon boundary region. The attacks of the disease are no longer confined to Ober-Cunewalde, but have also occurred in Oppach, Laivaldè, Beiersdorf, Lauba, Halbau, &c. The number of persons attacked is already over 100. Three cases have as yet resulted fatally. As regards the origin of the disease, it is said that a butcher of Ober-Cunewalde on Christmas eve made to his customers a present of smoked sausages, in the preparation of which meat containing trichinæ had been used. In all the families which had received and eaten those sausages attacks of the disease occurred.

*From Saxony, January 26* (own correspondence).—In view of the visitation of epidemics of the trichinosis with which several places in Saxony have of late been afflicted, the local authorities (Amtshaupmannschaft) at Plauen i. V. have recently issued a decree urgently recommending to the individual communities of the district the introduction of obligatory examination for trichinosis. In Ober-Cunewalde the persons attacked by the disease have attained to the number of about 170, and 9 deaths have hitherto occurred. At the village of Obersachsenfeld, near Schaufenberg, a new epidemic of trichinosis has broken out, resulting as yet in the occurrence of 20 cases of the disease. At Ober-Cunewalde a committee has been formed to aid the poor among the persons attacked.

## MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris.....	February 4.....	2,260,945	1,187	.....	.....	11	.....	25	7	51
Glasgow.....	February 4.....	545,678	264	.....	.....	.....	.....	1	6	6
Warsaw.....	February 28.....	439,174	215	.....	.....	7	.....	.....	4	3
Rome.....	December 31.....	373,356	218	.....	.....	7	.....	2	.....	3
Copenhagen.....	January 31.....	300,000	130	.....	.....	.....	.....	2	7	7
Edinburgh.....	February 4.....	262,733	98	.....	.....	.....	.....	.....	1	.....
Palermo.....	February 5.....	250,000	135	.....	.....	.....	.....	.....	3	4
Bristol.....	January 28.....	226,510	117	.....	.....	.....	.....	1	1	.....
Belfast.....	February 4.....	224,422	149	.....	.....	.....	.....	1	.....	1
Genoa.....	February 4.....	179,353	135	.....	.....	6	2	.....	.....	4
Trieste.....	January 28.....	154,500	123	.....	.....	4	.....	1	1	1
Havre.....	February 4.....	112,074	90	.....	.....	6	.....	1	.....	.....
Rheims.....	January 28.....	97,903	61	.....	.....	1	.....	1	.....	5
Rheims.....	February 4.....	97,903	61	.....	.....	.....	.....	1	.....	4
Merida.....	January 26.....	48,711	39	.....	1	.....	.....	1	.....	.....
Cienfuegos.....	February 6.....	25,000	63	.....	.....	53	.....	1	.....	.....

## UNITED STATES.

*San Francisco—Small-pox.*—The secretary of the health department reports that from January 1 to 31 there were 224 cases and 27 deaths, and from February 1 to 14 there were 60 cases and 7 deaths from small-pox.

JOHN B. HAMILTON,  
Supervising Surgeon-General, Marine-Hospital Service.





## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 9. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., March 2, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended March 2, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended February 11 corresponded to an annual rate of 22.2 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 15.2, and the highest in Preston, viz., 36.4 a thousand. Small-pox caused 31 deaths in Sheffield, 1 in Bristol, 1 in Leeds, 2 in Oldham, and 1 in Nottingham.

*London.*—One thousand eight hundred and thirty-eight deaths were registered during the week, including 15 from measles; scarlet fever, 36; diphtheria, 40; whooping-cough, 154; enteric fever, 12; and diarrhoea and dysentery, 12. Diseases of the respiratory organs caused 504 deaths; different forms of violence, 58; and 4 suicides were registered. The deaths from all causes corresponded to an annual rate of 22.4 a thousand. In greater London 2,361 deaths were registered, corresponding to an annual rate of 22.3 a thousand of the population. In the "outer ring" 12 deaths from diphtheria; whooping-cough, 48; and scarlet fever, 6, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended February 11 in the 16 principal town districts of Ireland was 29.6 a thousand of the population. The lowest rate was recorded in Kilkenny, viz., 8.5, and the highest in Lurgan, viz., 71.8 a thousand. In Dublin 202 deaths were registered, including 1 from measles; whooping-cough, 9; scarlet fever, 6; enteric fever, 2; diarrhoea, 2; and dysentery, 1.

The deaths registered in Ireland during the quarter ended December 31, 1887, corresponded to an annual rate of 17.5 a thousand.

*Scotland.*—The deaths registered in 8 principal towns during the week ended February 11 corresponded to an annual rate of 22.5 a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Perth, viz., 14.4, and the highest in Aberdeen, viz., 27.5 a thousand. The aggregate number of deaths registered from all causes was 568, including 13 from measles; diphtheria, 8; scarlet fever, 8; whooping-cough, 24; fever, 2; and diarrhoea, 7.

During the quarter ended December 31, 1887, the deaths registered corresponded to an annual rate of 18.8 a thousand of the estimated population.

*Buenos Ayres.*—The United States minister, in his dispatch dated January 12, 1888, states that cholera has appeared at Salta. "In the past three days there have been 20 cases and 7 deaths. The government has sent a number of physicians there with a full supply of medicines. Salta is a city of 40,000 inhabitants, located near the 24th parallel, 10 degrees north of Buenos Ayres, and not far from Bolivia. It is a beautiful place, 3,780 feet above the sea-level, and at times inundated by the Arias and Silleta rivers, which is always followed by malarial fevers. It is regarded very unhealthy generally."

*Callao.*—The United States consul, in his dispatch dated January 25, 1888, states that "the latest cholera reports from Chili show a falling off of the disease at Santiago, and a slight increase at Valparaiso and the southern ports. The most unfavorable statement refers to the appearance of two cases of the epidemic at the city of La Serena, a short distance inland from Coquimbo to the northward of Valparaiso. This is the only indication of a deviation in the course of the disease, which had been proceeding steadily in a southwardly direction. Here the interdiction of all vessels from Chilian ports is still vigorously maintained, and last week a British man-of-war, the 'Hyacinth,' from Arica, was refused admittance, although official interference was resorted to. Steamers arriving from Panama, and touching at Guayaquil, are subject to five days quarantine of observation, owing to the appearance of yellow fever at the last-named port. The public health of Lima and Callao continues to be satisfactory, and no cases of cholera or yellow fever have made their appearance on the Peruvian coast."

*Santiago de Cuba.*—The sanitary inspector reports, for the week ended February 18, 3 cases of yellow fever at the military hospital. In the country there are still some cases of small-pox, but they are of a mild character, and are rapidly getting well. The city, he reports, has

never shown a better sanitary condition than it has done for the last two or three weeks.

*Havana.*—One death from yellow fever and 27 from small-pox are reported for the week ended February 18, 1888.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris .....	February 11...	2,260,945	1,131	.....	.....	13	.....	9	6	52
Glasgow .....	February 11...	545,678	243	.....	.....	.....	.....	6	6	3
Warsaw .....	February 4....	439,174	194	.....	.....	7	.....	1	1	4
Calcutta .....	January 7.....	433,219	307	19	.....	.....	.....	.....	.....	2
Calcutta .....	January 14....	433,219	265	32	.....	.....	.....	.....	.....	.....
Amsterdam .....	February 4....	389,916	182	.....	.....	.....	.....	2	.....	3
Munich .....	January 28....	275,000	137	.....	.....	.....	.....	1	2	5
Bristol .....	February 11...	226,510	77	.....	.....	.....	.....	.....	1	1
Belfast .....	February 11...	224,422	142	.....	.....	.....	.....	1	.....	1
Genoa .....	February 11...	179,370	110	.....	.....	8	.....	.....	.....	2
Leipsic .....	February 11...	170,000	67	.....	.....	.....	.....	.....	3	5
Trieste .....	February 11...	154,500	128	.....	.....	5	.....	2	1	5
Toronto .....	February 18...	130,000	25	.....	.....	.....	.....	.....	.....	6
Stuttgart .....	February 11...	125,510	48	.....	.....	.....	.....	.....	1	2
Bremen .....	February 4....	122,000	44	.....	.....	.....	.....	1	.....	1
Havre .....	February 11...	112,074	101	.....	.....	6	.....	1	.....	.....
Barmen .....	February 11...	109,000	42	.....	.....	.....	1	.....	.....	.....
Leghorn .....	February 12...	101,444	65	.....	.....	.....	.....	.....	1	.....
Merida .....	February 22...	48,711	36	.....	.....	.....	.....	1	.....	.....
Cienfuegos .....	February 13...	35,464	40	.....	.....	30	.....	.....	.....	.....
Cienfuegos .....	February 20...	35,464	56	.....	.....	42	.....	.....	.....	.....
Guayaquil .....	January 21....	30,000	69	.....	2	10	.....	25	.....	.....
Guayaquil .....	January 28....	30,000	65	.....	3	21	.....	17	.....	.....
Sagua La Grande .....	February 11...	15,605	13	.....	.....	4	.....	.....	.....	.....

## UNITED STATES.

*Vineyard Haven, Mass.*—The captain and some of the crew of small-pox infected vessels recently quarantined at Boston had previously been ashore at Vineyard Haven. A supply of vaccine virus has been furnished the medical officer of the Marine-Hospital Service for use at that port.

*Red Wing, Minn.*—The secretary of the State Board of Health, in a communication relative to newspaper reports of "winter cholera," states that there is "no occasion for alarm. There are lots of diarrhoea and cases of cholera-morbus in Minneapolis. A systematic inquiry is now being made, in co-operation with the local board of health."

*San Francisco, Cal.*—*Small-pox epidemic.*—The following are copies of official telegrams relating thereto:

WASHINGTON, D. C., February 25, 1888.

Surgeon H. W. SAWTELLE,

*Marine-Hospital Service, San Francisco, Cal.:*

Applications are being received for aid in small-pox epidemic. Call upon board of health and ascertain what is required.

HAMILTON, *Surgeon-General.*

WASHINGTON, *February 25, 1888.*

SECRETARY STATE BOARD OF HEALTH,  
*Sacramento, Cal.:*

Applications are being received for governmental aid in small-pox epidemic. What do you require?

HAMILTON, *Surgeon-General.*

SACRAMENTO, CAL., *February 25, 1888.*

Small-pox is scattered throughout this State. Suppose other States want the frontier guarded to keep it [small-pox] from getting out by rail.

G. G. TYRRELL,  
*Secretary California State Board.*

SAN FRANCISCO, CAL., *February 28, 1888.*

San Francisco Board of Health has informed me that no governmental aid is required on account of small-pox epidemic here.

SAWTELLE, *Surgeon, M.-H. S.*

JOHN B. HAMILTON,  
*Supervising Surgeon-General, Marine-Hospital Service.*

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 10. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., March 9, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended March 9, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended February 18 corresponded to an annual rate of 20.9 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 14.1, and the highest in Wolverhampton, viz., 29.4 a thousand. Small-pox caused 30 deaths in Sheffield, 2 in Bristol, 2 in Leeds, 1 in London, 1 in Manchester, and 1 in Nottingham.

*London.*—One thousand six hundred and eighty-nine deaths were registered during the week, including 14 from measles; scarlet fever, 30; diphtheria, 18; whooping-cough, 122; enteric fever, 18; diarrhoea and dysentery, 8; and small-pox, 1. Diseases of the respiratory organs caused 487 deaths; different forms of violence, 39; and 2 suicides were registered. The deaths from all causes corresponded to an annual rate of 20.6 a thousand. In greater London 2,147 deaths were registered, corresponding to an annual rate of 20.3 a thousand of the population. In the "outer ring" 8 deaths from diphtheria, and whooping-cough, 46, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended February 18 in the 16 principal town districts of Ireland was 28.3 a thousand of the population. The lowest rate was recorded in Kilkenny, viz., 12.7, and the highest in Drogheda, viz., 93.0 a thousand. In Dublin 175 deaths were registered, including 1 from measles; whooping-cough, 4; scarlet fever, 7; diarrhoea, 2; typhus, 1; diphtheria, 1; erysipelas, 1; and mumps, 1.



*Scotland.*—The deaths registered in 8 principal towns during the week ended February 18 corresponded to an annual rate of 22.5 a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 13.5, and the highest in Paisley, viz., 30.4 a thousand. The aggregate number of deaths registered from all causes was 568, including 8 from measles; diphtheria, 13; scarlet fever, 5; whooping-cough, 21; fever, 4; and diarrhoea, 11.

*Lima.*—The United States minister, in his dispatch dated January 25, 1888, transmits copies and translations from two daily papers; also a copy and translation of an official cablegram from the Peruvian consul at Guayaquil; also a copy and translation of a decree issued by the Minister of Justice, Señor Garcia, that the shipping from Guayaquil be submitted to five days' quarantine, with a medical officer on board. The following are the copies:

VALPARAISO, *January 13, 1888.*

Valparaiso, yesterday, 55; deaths, 20. Santiago, yesterday, 46; deaths, 16. Peruvian consul communicates cholera at Concepcion; Talcahuano and neighboring ports, probable infection. In southern provinces it continues. Cholera at Salta, Argentine.

VALPARAISO, *January 17, 1888.*

Valparaiso—attacked, 60; deaths, 36. Santiago, 35; deaths, 11. Continues south. Suspicious cases at La Serena.

GUAYAQUIL, *January 15, 1888.*

With change of season yellow-fever cases have appeared. Steamships "Colombia" and "Pizarro" carry foul (patente) bill of health.

LIMA, *January 17, 1888.*

In to-day's session the board agreed that the shipping from Guayaquil be submitted to five days' quarantine, with medical officer on board, the Callao board being charged with the ordering of the measures they may deem most proper for the fulfillment of this accord.

*Santiago de Cuba.*—The sanitary inspector reports, for the week ended February 25, that "the sanitary condition of this city has been good for this week. We have no contagious or infectious maladies to record, either in the towns or the harbor. Only 1 case of yellow fever at the military hospital, ending fatally, and no other cases of it in the hospital. \* \* \* Tetanus enters largely into the mortality of the week. This is owing to the changeable state of the temperature. The case of the adult who died of it is curious in this respect, that he was attending on a sick horse that died of tetanus. If the theory of the equine origin of tetanus is true, then this case seems to prove its truthfulness."

*Callao.*—The United States consul, in his dispatch dated February 11, 1888, regarding cholera, states that "under date of the 2d instant,



the Peruvian medical representative cables that at Valparaiso there were only 17 new cases and 4 deaths. At Santiago, 27 new cases and 7 deaths. In the southern towns of Curico, Parrol, and Concepcion disease declining, and in the north, at Serena and Chalinga, only a few cases. From other information received the last-mentioned cases did not present the characteristic symptoms of Asiatic cholera, and little alarm was manifested. The Peruvian consul at Guayaquil reports that yellow fever at that place had almost disappeared. The honorable Mr. Buck, United States minister to Peru, arrived here by the steamer from Panama on the 30th ultimo, and, owing to one fatal case of yellow fever which occurred on board the vessel, the passengers have been kept in strict quarantine until to-day, when they were allowed to land. The public health of Lima and Callao continues to be satisfactory."

*Demerara.*—The United States consul, under date of February 14, 1888, states that "yellow fever has broken out in this city, but fortunately very few cases have occurred. Up to date 10 cases have been reported, 3 of which have proved fatal. The last death occurred on the 10th ultimo. Should no further cases occur, in a few days this consulate will issue clean bills of health."

*Buenos Ayres.*—One thousand one hundred and thirty-seven deaths are reported for the month of December, 1887, including small-pox, 95; enteric fever, 28; scarlet fever, 2; and diphtheria, 68.

*Bordeaux.*—Six hundred and twenty-nine deaths are reported for the month of January, 1888, including small-pox, 3; enteric fever, 30; scarlet fever, 1; and diphtheria and croup, 13.

*Havana.*—The sanitary inspector reports 608 deaths for the month of February, 1888, including yellow fever, 7; small-pox, 140; enteric fever, 10; so-called pernicious fever, 10; diphtheria, 6; and croup, 5. "Although small-pox still prevails pretty actively in many places of the middle and western departments of this island, the disease, as far as mortality from it furnishes a criterion to judge by, is diminishing considerably in Havana and its immediate vicinity. It is said, however, that the epidemic is milder in type than it was a month or two ago, and as no report of cases is made to any person, board, or body, it is not easy to even approximate at all closely to the actual number of cases existing. Yellow fever has within the last few days shown a little increased activity, and has made several victims among employés of different establishments, who have in the main been sent to the 'Quinta de los Dependiente.' As usual, several cases exist in the military hospital, which is located contiguous to one of the commercial wharves of this port."

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Glasgow .....	February 18...	545,678	262	.....	.....	.....	.....	1	4	6
Warsaw .....	February 11...	439,174	220	.....	.....	9	.....	.....	8	5
Calcutta .....	January 21...	433,219	262	19	.....	.....	.....	.....	.....	1
Amsterdam .....	February 11...	389,916	240	.....	.....	.....	.....	2	.....	4
Rome .....	January 7...	382,973	216	.....	.....	6	.....	1	2	4
Munich .....	February 4...	275,000	152	.....	.....	.....	.....	.....	.....	6
Palermo .....	February 19...	250,000	129	.....	.....	.....	.....	3	2	5
Belfast .....	February 18...	224,422	124	.....	.....	.....	.....	.....	1	2
Havana .....	February 25...	208,000	147	.....	4	29	.....	2	.....	.....
Leipsic .....	February 18...	170,000	63	.....	.....	.....	.....	1	2	2
Trieste .....	February 11...	154,500	117	.....	.....	4	.....	.....	1	3
Toronto .....	February 25...	130,000	23	.....	.....	.....	.....	.....	.....	.....
Bremen .....	February 11...	122,000	39	.....	.....	.....	.....	.....	1	.....
Havre .....	February 18...	112,074	104	.....	.....	4	.....	1	.....	.....
Barmen .....	February 18...	109,000	40	.....	.....	.....	.....	.....	.....	1
Mayence .....	February 11...	65,701	26	.....	.....	.....	.....	1	.....	.....
Cienfuegos .....	February 27...	35,464	37	.....	.....	.....	.....	.....	1	1
Guayaquil .....	February 6...	30,000	62	.....	.....	.....	.....	.....	.....	.....
Guayaquil .....	February 13...	30,000	74	.....	4	16	.....	.....	.....	.....
Sagua La Grande .....	February 18...	15,605	12	.....	7	11	.....	23	.....	.....
Sagua La Grande .....	February 25...	15,605	10	.....	.....	8	.....	.....	.....	.....
Sagua La Grande .....	February 25...	15,605	10	.....	.....	6	.....	.....	.....	.....

## UNITED STATES.

The medical officer in charge of the United States quarantine station at Sapelo Sound reports that the German bark "Vesta," sent to that station on the 25th ultimo as suspicious, though dirty and arriving from a small-pox infected district, was not herself infected, and was therefore only detained for one precautionary fumigation. The disease on board, he reports, was bilious remittent fever.

*Key West.*—The medical officer in charge of the United States Marine Hospital at Key West reports, under date of February 29, 1888, a total of 7 cases of small-pox, with 2 deaths, 3 recoveries, and 2 still sick. A small pest-house is being erected by the county board of health. He also reports, under date of March 3, that the municipal authorities have recently passed an ordinance establishing a city health department, and reviving the office of city health officer. A number of the business men of the city have also had a meeting to organize an auxiliary sanitary association for the purpose of purchasing and operating an odorless excavating machinery. It is estimated that there are three thousand privy-vaults upon the island, consisting mainly of excavations in the ground, not water-tight, and often in proximity to leaky cisterns upon the same level.

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 11. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., March 16, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended March 16, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended February 25 corresponded to an annual rate of 21.6 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Cardiff, viz., 13.0, and the highest in Plymouth, viz., 32.2 a thousand. Small-pox caused 20 deaths in Sheffield, 1 in Leeds, 1 in greater London, 5 in Manchester, 1 in Liverpool, 1 in Oldham, and 1 in Blackburn.

*London.*—One thousand seven hundred and seventy-two deaths were registered during the week, including 18 from measles; scarlet fever, 32; diphtheria, 30; whooping-cough, 127; enteric fever, 16; diarrhœa and dysentery, 8; and choleraic diarrhœa, 1. Diseases of the respiratory organs caused 478 deaths; different forms of violence, 62; and 9 suicides were registered. The deaths from all causes corresponded to an annual rate of 21.6 a thousand. In greater London 2,225 deaths were registered, corresponding to an annual rate of 21.0 a thousand of the population. In the "outer ring" 9 deaths from diphtheria; whooping-cough, 34; and small-pox, 1, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended February 25 in the 16 principal town districts of Ireland was 31.2 a thousand of the population. The lowest rate was recorded in Armagh, viz., 10.3, and the highest in Dundalk, viz., 74.2 a thousand. In Dublin 192 deaths were registered, including 2 from measles; whooping-cough, 4; scarlet fever, 8; and enteric fever, 3.

*Scotland.*—The deaths registered in 8 principal towns during the week ended February 25 corresponded to an annual rate of 22.6 a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 10.1, and the highest in Paisley, viz., 27.8 a thousand. The aggregate number of deaths registered from all causes was 571, including 9 from measles; diphtheria, 7; scarlet fever, 3; whooping-cough, 32; fever, 1; and diarrhœa, 9.

*Havana.*—Two deaths from yellow-fever and 20 from small-pox are reported for the week ended March 3, 1888.

*Contagious pneumonia among French swine.*—Report by Consul Mason :

MARSEILLES, February 4, 1888.

During the month of June last there appeared among the swine in the vicinity of Marseilles a new and mysterious disease, which has since assumed the proportions of a general and serious epidemic. Its symptoms were coughing, diarrhœa, loss of appetite and strength, and in some cases the appearance of red blotches on the skin. A large majority of the hogs attacked died within a few days, and the farmers and swine-growers of this region, unable to resist the spread of the epidemic, attempted to escape it by selling off their hogs. On the 21st of September a large fair was held in Aubagne, a small city about ten miles from Marseilles, at which several thousand infected hogs were sold, nearly all of which have since died, and spread the epidemic throughout this department and as far north and westward as Lyons and Beziers. It is estimated that more than 30,000 swine died of the malady in this department during the last four months of 1887. The entry and sale in Marseilles of freshly-killed pork from the surrounding country was prohibited in December by municipal decree, and until some effective remedy for the disease can be found, hog-raising is practically at an end in this part of France. When the epidemic became serious, two experts, MM. Conil and Chantemesse, from the Society of Biology, at Paris, were sent by the Minister of Agriculture to make a thorough study of the disease and report their conclusions to the government. Their observations are not yet concluded, but at a recent meeting of the municipal sanitary committee they presented an informal report of progress, from which, as well as from personal inquiry and observation, the following facts have been derived: They pronounce the disease "contagious pneumonia," and they believe it to be identical with the "schweine seuche," described by Loeffler and Schutz, and the "swine plague," which has been investigated by Professor Salmon in the United States. At first they were inclined to believe it to be what has been hitherto known in France as the "rouget," but certain indications disprove this theory, and the disease is now recognized as a new and highly contagious malady, the origin of which no one has satisfactorily explained. There is no importation of swine to Marseilles from any country where this disease, or anything like it, has been previously known, and certainly no pork products, except lard, are admitted to France from the United States. Like the endemic cholera of the Mediterranean ports, it seems to have been of local origin. Thus far, as already indicated, no effective remedy for swine affected by this disease has been announced. It was soon noticed, however, that such animals as had been slightly attacked and recovered



were thereby rendered impervious to further contagion. This naturally suggested the idea of vaccination with attenuated cultures of the virus as a preventive, and experiments have been made in this direction so far as to show that rabbits, pigeons, and guinea-pigs die, almost without exception, when inoculated with the original virus at its full strength, but survive in most cases when the material used is a culture attenuated by successive cultivations in gelatine or juices of meat. The malady is extremely contagious, both by inhalation and absorption. If inhaled, the ulcers are found most numerous and malignant in the lungs; if the contagion be swallowed with food or drink, they appear in the stomach and intestines. A single diseased hog, unless promptly removed when the first symptoms appear, is sufficient to quickly contaminate not only an entire herd, but the premises in which they are kept. It is abundantly demonstrated that the germ of infection is a microbe or bacillus which generates rapidly and in myriads among the saliva, the fecal matter, and other secretions of diseased animals. Experiments have shown that the microbe resists stubbornly several leading disinfectants, among which are sulphate of iron, chloride of zinc, lime-water, corrosive sublimate, and spirits of turpentine, and succumbs but slowly to sulphate of copper, oxalic acid, and pure alcohol. The only two chemicals which have been found to destroy it promptly and certainly are hydrochloric and phenic acids, and the most effective wash for contaminated sties and hog-yards is a solution of four parts phenic acid and two parts hydrochloric acid in one hundred parts of water. Desiccation seems to have but little effect upon this stubborn organism. A drop of virus from a diseased animal has been evaporated and the residuum kept absolutely dry for fifteen days, and then, upon being dissolved in meat-juice, has rapidly developed microbes of contagious pneumonia. The one other effective agency of destruction is heat. The germ is effectually destroyed by a temperature of 70° Centigrade, and it thus happens that the meat of a hog which had been affected by this disease is not necessarily deleterious, provided it has been thoroughly cooked, as all pork products should invariably be before being eaten. It is impossible to predict to what limits the present epidemic in southern France may extend before it can be checked. Thus far, the only remedy that has been even suggested is vaccination, and this has reached only the experimental stage. The vaccine has undoubtedly been found and applied successfully to several species of small animals, such as guinea-pigs and rabbits, but the conditions under which it can be safely applied to swine are yet to be demonstrated, since it appears that hogs, when even slightly contaminated by contact with the disease, may live indefinitely, but cannot be fattened. Even a small degree of infection is sufficient to destroy their appetite and the power to assimilate food beyond the barest actual requirements of existence. Hitherto the principal effort has been to restrict the spread of the epidemic. Traffic in hogs has practically ceased in this part of France, and there seems to be but one method by which the farmers and pork-raisers whose premises have been infected can re-establish their business. This will be to slaughter or banish all the swine now in their yards and pens, then cleanse, air, and disinfect the premises thoroughly, and re-establish their stock with clean, healthy hogs, imported from localities sufficiently remote to warrant their freedom from contamination.

The foregoing account shows clearly that the disease is the same as that known here as "swine plague" or "hog cholera."

## MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris.....	February 25...	2,260,945	1,070	.....	.....	10	.....	17	5	46
Glasgow.....	February 25...	545,678	272	.....	.....	.....	.....	.....	12	3
Warsaw.....	February 18...	439,174	215	.....	.....	3	.....	.....	13	3
Calcutta.....	January 28...	433,219	227	16	.....	.....	.....	.....	.....	.....
Amsterdam.....	February 25...	389,916	217	.....	.....	.....	.....	.....	.....	2
Rome.....	January 14...	382,973	225	.....	.....	.....	.....	1	.....	1
Rome.....	January 21...	382,973	245	.....	.....	6	.....	6	1	5
Copenhagen.....	February 14...	300,000	171	.....	.....	.....	.....	.....	5	5
Munich.....	February 11...	275,000	135	.....	.....	.....	.....	.....	.....	5
Edinburgh.....	February 18...	262,733	106	.....	.....	.....	.....	.....	2	4
Palermo.....	February 26...	250,000	132	.....	.....	.....	.....	.....	4	5
Bristol.....	February 25...	226,510	83	.....	.....	.....	.....	1	1	.....
Genoa.....	February 18...	179,368	125	.....	.....	11	1	.....	.....	3
Genoa.....	February 25...	179,368	143	.....	.....	11	1	.....	.....	8
Leipzig.....	February 25...	170,000	71	.....	.....	.....	.....	.....	.....	.....
Stuttgart.....	February 25...	125,510	51	.....	.....	.....	.....	.....	.....	2
Gibraltar.....	February 19...	23,631	7	.....	.....	.....	.....	1	.....	.....

## UNITED STATES.

*Gulf Quarantine.—Removal of quarantine station from Ship Island.—*  
Act approved March 5, 1888:

AN ACT to authorize the removal of the quarantine station from Ship Island, Miss.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That the Secretary of the Treasury is hereby authorized to cause the removal of the national quarantine station, now located on Ship Island, in the Gulf of Mexico, to some other island in said Gulf, or in such pass in the Mississippi Delta as may be recommended by a board to be designated by him, and that the necessary quarantine buildings and appliances be established thereon; and that the sum of forty-five thousand dollars, or so much thereof as may be necessary, is hereby appropriated to carry out the purposes of this act.

*San Francisco.—Small-pox.—*One hundred and fifteen cases and 9 deaths are reported for the month of February, 1888.

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

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VOL. III. { Abstract }  
          { No. 12. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., March 23, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended March 23, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended March 3 corresponded to an annual rate of 21.5 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Sunderland, viz., 13.4, and the highest in Blackburn, viz., 34.2 a thousand. Small-pox caused 21 deaths in Sheffield, 1 in Leeds, 1 in Nottingham, 1 in Manchester, and 1 in Bristol.

*London.*—One thousand seven hundred and ninety-four deaths were registered during the week, including 15 from measles; scarlet fever, 27; diphtheria, 24; whooping-cough, 94; enteric fever, 15; diarrhoea and dysentery, 10. Diseases of the respiratory organs caused 488 deaths; different forms of violence, 65; and 5 suicides were registered. The deaths from all causes corresponded to an annual rate of 21.9 a thousand. In greater London 1,905 deaths were registered, corresponding to an annual rate of 18.0 a thousand of the population. In the "outer ring" 9 deaths from diphtheria; whooping-cough, 43; and fever, 3, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended March 3 in the 16 principal town districts of Ireland was 35.3 a thousand of the population. The lowest rate was recorded in Londonderry, viz., 21.4, and the highest in Lim-

erick, viz., 44.5 a thousand. In Dublin 230 deaths were registered, including 1 from small-pox; diphtheria, 3; measles, 3; whooping-cough, 6; scarlet fever, 5; and enteric fever, 5.

*Scotland.*—The deaths registered in 8 principal towns during the week ended March 3 corresponded to an annual rate of 23.4 a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 12.2, and the highest in Glasgow, viz., 27.5 a thousand. The aggregate number of deaths registered from all causes was 592, including 14 from measles; diphtheria, 9; scarlet fever, 6; whooping-cough, 28; fever, 2; and diarrhoea, 7.

*Santiago de Cuba.*—The sanitary inspector reports for the week ended March 10, 1888, that yellow fever has totally disappeared from the military hospital, and no cases of it are reported in the town. Small-pox also has completely disappeared.

*Havana.*—One death from yellow fever and 29 from small-pox are reported for the week ended March 10, 1888.

*Callao.*—The United States consul, in his dispatch dated February 21, 1888, states that "the last official report respecting cholera in Chili, dated at Valparaiso the 18th instant, is not encouraging. It states 'cholera north and south does not decline. Cases reported at Pisagua. Valparaiso, new cases, 21; deaths, 4; Santiago, new cases, 38; deaths, 10.' Pisagua is a port just north of Iquique, and dangerously near to Arica, from whence the distance to the Peruvian boundary at Ilo is insignificant. At Ilo a sanitary cordon is established, but no confidence is entertained regarding its efficiency. The sanitary board here is now called upon to renew its endeavors to prevent all communication with the infected districts. The public health of Lima and Callao continues to be satisfactory. A cable message has just been received by the government at Lima from the consul at Iquique, stating that no cases of cholera have appeared in the department of Toropaca, in which are comprised Iquique and Pisagua."

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris .....	March 3 .....	2,260,945	1,200	.....	.....	6	.....	13	5	48
Glasgow .....	March 3 .....	545,678	278	.....	.....	.....	.....	.....	4	4
Warsaw .....	February 25 .....	439,174	175	.....	.....	9	.....	.....	2	2
Calcutta .....	February 4 .....	433,219	262	29	.....	1	.....	.....	.....	.....
Rome .....	January 28 .....	382,973	250	.....	.....	5	.....	3	.....	2
Copenhagen .....	February 21 .....	300,000	114	.....	.....	.....	.....	1	11	.....
Munich .....	February 18 .....	275,000	153	.....	.....	1	.....	.....	2	4
Edinburgh .....	February 25 .....	262,733	106	.....	.....	.....	.....	.....	.....	2
Edinburgh .....	March 3 .....	262,733	106	.....	.....	.....	.....	1	1	1
Palermo .....	March 3 .....	250,000	95	.....	.....	.....	.....	1	2	.....
Belfast .....	February 25 .....	224,422	153	.....	.....	.....	1	1	2	.....
Belfast .....	March 3 .....	224,422	170	.....	.....	.....	.....	.....	1	2
Genoa .....	March 3 .....	179,337	117	.....	.....	5	.....	.....	.....	3
Leipsic .....	March 3 .....	170,000	83	.....	.....	.....	.....	2	4	6
Trieste .....	February 25 .....	154,500	95	.....	.....	5	.....	.....	2	.....
Toronto .....	March 10 .....	130,000	42	.....	.....	.....	.....	2	.....	.....
Stuttgart .....	March 3 .....	125,510	48	.....	.....	.....	.....	.....	.....	3
Havre .....	February 25 .....	112,074	92	.....	.....	5	.....	1	.....	1
Havre .....	March 3 .....	112,074	116	.....	.....	8	.....	3	.....	1
Barmen .....	February 25 .....	109,000	34	.....	.....	.....	1	.....	.....	1
Barmen .....	March 3 .....	109,000	45	.....	.....	.....	1	.....	.....	3
Mayence .....	February 25 .....	65,701	30	.....	.....	.....	.....	.....	.....	1
Merida .....	February 29 .....	48,711	39	.....	.....	.....	1	.....	.....	.....
Cienfuegos .....	March 5 .....	35,464	30	.....	.....	14	.....	1	.....	.....
Cienfuegos .....	March 12 .....	35,464	37	.....	1	24	.....	.....	.....	.....
Gibraltar .....	February 26 .....	23,681	8	.....	.....	.....	.....	.....	1	1
Sagua la Grande .....	March 3 .....	15,605	14	.....	.....	7	.....	.....	.....	.....

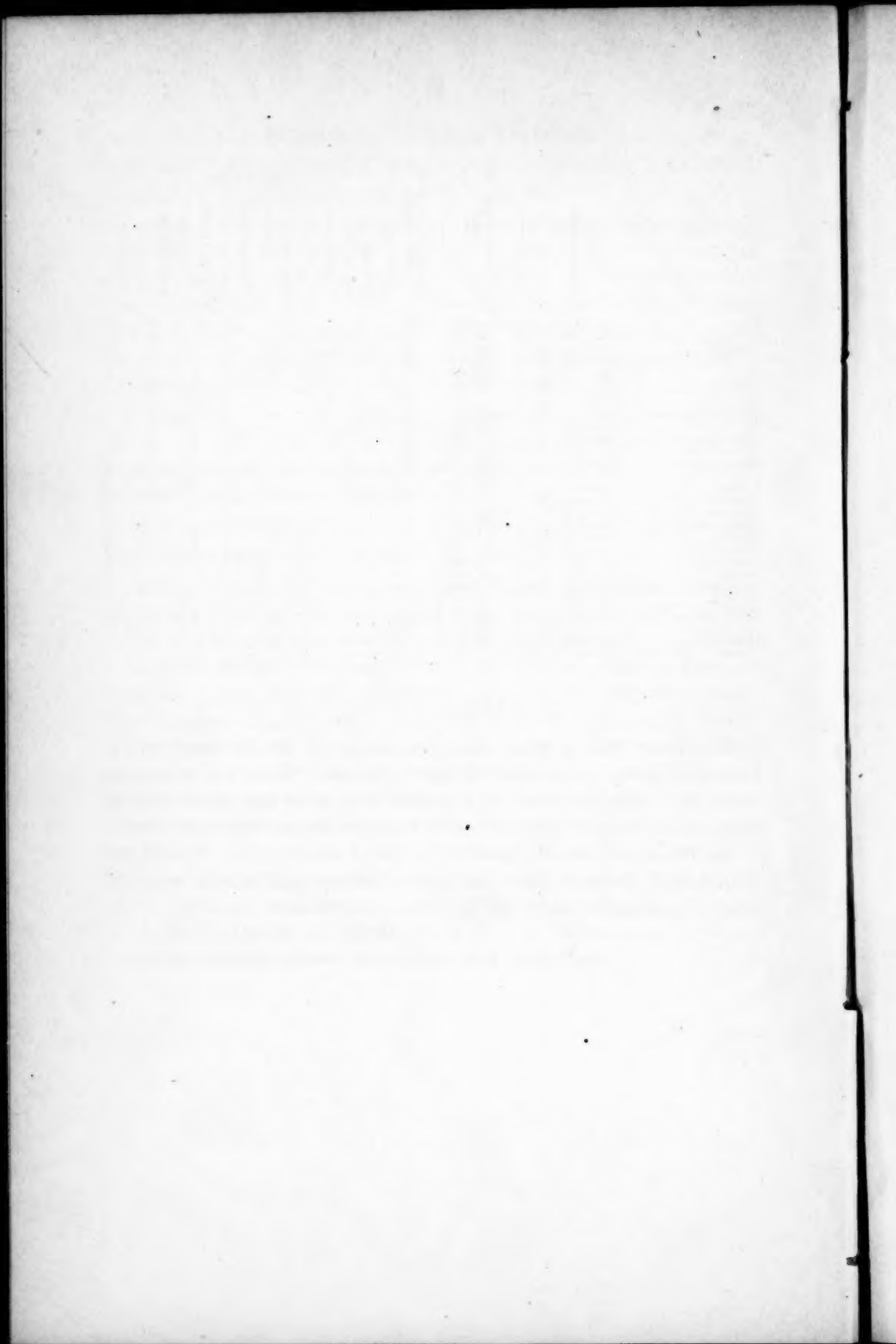
## UNITED STATES.

*Key West.*—The medical officer in charge of the Marine-Hospital Service reports, under date of March 15, that “there are no cases of small-pox upon the island at this date, and, as no new cases have developed for the past week, it is hoped the disease has been eradicated.”

*San Francisco.*—*Small-pox.*—The board of health, under date of the 15th instant, declared small-pox to be no longer epidemic in this city, only 16 cases and 1 death having been reported since March 1.

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 13. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., March 30, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended March 30, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended March 10 corresponded to an annual rate of 23.3 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Halifax, viz., 15.0, and the highest in Manchester, viz., 31.3 a thousand. Small-pox caused 29 deaths in Sheffield, 3 in Oldham, 2 in Manchester, and 2 in Blackburn.

*London.*—One thousand eight hundred and eighty-six deaths were registered during the week, including 2 from small-pox; measles, 21; scarlet fever, 29; diphtheria, 24; whooping-cough, 101; enteric fever, 20; diarrhoea and dysentery, 17. Diseases of the respiratory organs caused 490 deaths; different forms of violence, 51; and 6 suicides were registered. The deaths from all causes corresponded to an annual rate of 23.0 a thousand. In greater London 2,385 deaths were registered, corresponding to an annual rate of 22.5 a thousand of the population. In the "outer ring" 38 deaths from whooping-cough were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended March 10 in the 16 principal town districts of Ireland was 32.3 a thousand of the population. The lowest rate was recorded in Drogheda, viz., 0.0, and the highest in Wexford, viz., 47.0 a thousand. In Dublin 224 deaths were registered, including 2 from diphtheria; measles, 4; whooping-cough, 7; scarlet fever, 5; typhus, 1; and enteric fever, 1.

*Marseilles.*—One thousand and thirty deaths were registered during the month of February, 1888, including small-pox, 12; enteric fever, 21; scarlet fever, 2; diphtheria and croup, 46; and measles, 18.

*Denmark.*—The quarantine order issued by the Danish Government, under date of February 24, 1888, includes the following: Quarantine measures are to be enforced with regard to ports on the Swedish coast between Malmö and Landskrona; all ports of Chili, Florida, Jamaica, Martinique, Guadeloupe, Cuba, East Indies, Tonkin, and Cochin China; Trieste; all ports of Egypt; Red Sea ports; Rio Janeiro; and Havana. The prohibition against the importation into the kingdom of used linen, used articles of clothing, and used bed-clothes—providing the articles named do not constitute the personal effects of travelers—rags, waste cotton and wool, refuse paper, hair, and hides, remains in force. In addition thereto, special attention is to be paid to the cleansing, under official inspection, of linen, clothing, and bed-clothing brought from Rio Janeiro and Havana as the effects of travelers.

*Martinique.*—The United States consul, in his dispatch under date of March 3, 1888, states that "small-pox in an epidemic form has been spreading here, and while it is difficult to arrive at the exact number of cases, there are presumed to be in this island nearly three thousand persons affected, there being forty deaths or more during the last week. Fortunately the disease seems to be a mild form, and it is here hoped that it will speedily run its course, many persons having been vaccinated."

*Santiago, Chili.*—The United States *chargé d'affaires ad interim*, in his dispatch dated January 31, 1888, with reference to cholera, states that "the disease has not increased, but rather gradually diminished here. The average number of deaths from it daily, which at the latter date was about 20, has declined to from 10 to 12. This in a population of 200,000 inhabitants is not alarming. About the middle of December the disease appeared in Valparaiso, spreading with unusual rapidity, causing the number of deaths to exceed 30 a day in a population a little more than half that of the capital. Happily the disease has diminished there too, so that the number of deaths of cholera as published in the bulletins average from 8 to 12 daily at present. There is more or less cholera through the provinces, especially to the south, and the number of deaths from it may approximately be estimated from 30 to 40 daily. Wherever it appears it is promptly met by medical aid. There is no unusual excitement or fear manifested by the public, and business and amusements are going on as usual. Many of the well-to-do people have



gone to their estates or to the sea-side to escape the hot days at the capital. Congress will adjourn in a few days, and the president, with most of the cabinet and other officials, will remove to Valparaiso and Viña del Mar, to remain until about the 1st of April.

*Havana.*—Three deaths from yellow fever and 21 from small-pox are reported for the week ended March 17, 1888.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris.....	March 10.....	2,260,945	1,253	.....	.....	11	.....	14	3	34
Glasgow.....	March 10.....	545,678	297	.....	.....	.....	.....	7	3	5
Warsaw.....	March 3.....	439,174	202	.....	.....	8	.....	.....	.....	5
Calcutta.....	February 11.....	433,219	235	31	.....	.....	.....	.....	.....	1
Amsterdam.....	March 3.....	389,916	198	.....	.....	.....	.....	1	.....	1
Amsterdam.....	March 10.....	389,916	213	.....	.....	.....	1	.....	.....	8
Rome.....	February 4.....	382,973	279	.....	.....	2	.....	.....	.....	2
Munich.....	February 25.....	275,000	144	.....	.....	.....	.....	1	1	1
Palermo.....	March 12.....	250,000	127	.....	.....	.....	1	3	2	1
Belfast.....	March 10.....	227,022	148	.....	.....	.....	.....	2	2	.....
Genoa.....	March 10.....	179,329	132	.....	.....	6	.....	.....	.....	3
Leipsic.....	March 10.....	170,000	92	.....	.....	.....	.....	.....	1	9
Trieste.....	March 3.....	154,500	119	.....	.....	7	.....	.....	1	3
Toronto.....	March 17.....	130,000	24	.....	.....	.....	.....	.....	1	4
Stuttgart.....	March 10.....	125,510	43	.....	.....	.....	.....	.....	.....	1
Bremen.....	March 3.....	122,000	58	.....	.....	.....	.....	1	.....	1
Barmen.....	March 10.....	109,000	47	.....	.....	.....	.....	.....	.....	1
Merida.....	March 13.....	48,711	44	.....	.....	.....	.....	3	.....	.....
Guayaquil.....	February 19.....	30,000	89	.....	6	10	.....	31	.....	.....
Guayaquil.....	February 26.....	30,000	74	.....	3	13	.....	29	.....	.....
Gibraltar.....	March 4.....	23,631	18	.....	.....	.....	.....	.....	.....	1
Sagua la Grande.....	March 10.....	15,605	10	.....	.....	7	.....	.....	.....	.....

## UNITED STATES.

The following report by the Senate Committee on Epidemic Diseases, in relation to seaboard quarantines, is republished for the information of quarantine authorities:

Mr. HARRIS, from the Committee on Epidemic Diseases, submitted the following

## REPORT:

[To accompany bill S. 2493.]

The Committee on Epidemic Diseases has had under consideration several bills, resolutions, and memorials, as follows:

Senate bill 665, "To establish a quarantine station at the port of San Francisco;"

Senate bill 1641, "To establish a permanent quarantine station at or near Cape Charles, Virginia;"

Resolutions of the legislature of the State of Virginia in the nature of a memorial, asking the establishment of a quarantine station at Cape Charles;

Resolutions of the Board of Trade of Chester, Pa.;

Petition of the Board of Health of Rockford, Ill.;

Resolutions of the Board of Health of Charleston, S. C.;

Petition of the Medical Society of San Diego, Cal.; and

Resolutions of the American Public Health Association;

All urging the establishment of national quarantine at the points of danger upon the Gulf and sea coast.

The committee reports an original bill, providing for the establishment of seven quarantine stations upon the coast, in addition to the one already provided for at the mouth of the Mississippi River by special act of the present session. The two bills above referred to are therefore reported back with the recommendation that they be indefinitely postponed.

The Public Health Association of America, at its annual meeting in November, 1887, by resolutions, earnestly urge the establishment, thorough equipment, and maintenance of a system of coast quarantine.

Many other sanitary organizations have earnestly urged the same policy, and so far as the committee is advised every sanitary organization in the country appreciates its importance and earnestly recommends its adoption.

These bills, resolutions, and memorials were referred by the committee to the Surgeon-General of the Marine-Hospital Service, for such suggestions as in his opinion the subject merits, and the following communication was addressed to the committee by that officer:

The time has come when the judgment of sanitarians has passed beyond the realm of speculation in the matter of quarantine. That word no longer means the detention on board of a vessel for a period of "forty days" of the ill-fated passengers and crew of a suspected vessel. It means the speedy removal of the sick to a comfortable hospital, the disinfection and cleansing of the vessel, and her restoration to the commercial fleet at the earliest possible date, the lightering and removal of the cargo and the cleansing of the bilge. Clean ships are not *per se* carriers of infection, foul ones are; and the time will doubtless come when enlightened sanitary legislation will enact a penalty for maintaining a foul vessel as a pestilence breeder, and when the time shall come when we shall have only clean ships sailing from clean ports, then our quarantine stations may be made inspection stations only, but for many years it will be necessary to rigidly enforce quarantine measures as now practiced and outlined above.

Those most interested being agreed that the maintenance of the sea-board quarantines is of the first necessity, it therefore follows that those establishments should be well built and kept supplied with the latest and most improved sanitary appliances for the work. To that end the accompanying bill has been framed, and attached to this report are detailed reasons for the establishment of each quarantine named in the bill, together with an estimate of the cost of the same. Included in the estimate is the amount considered necessary for the maintenance of the stations for the first year. Moreover, the season is now rapidly approaching when epidemic diseases will again increase, and what is done to be of avail this year should be done quickly.

*Estimated cost and annual expense of national quarantine stations on the Atlantic, Gulf, and Pacific coasts, recommended to be established and properly equipped.*

The stations starred are in temporary use by the Government, but are not properly equipped, the expenses thereof being borne out of the contingent fund at the disposal of the President for the prevention of the spread of epidemic diseases, and the maintenance of quarantine at points of danger.

\* DELAWARE BREAKWATER.

(Site owned by the Government.)

Disinfecting machinery.....	\$20,000
Steam-tug.....	30,000
Warehouse and additional buildings.....	10,000
Annual expenses.....	10,000
Total.....	70,000

There is at present at this station a small hospital and boat-house, which will answer for the present. This quarantine station is necessary for the quarantine service of the populous States bordering on the Delaware River.

Pennsylvania, Delaware, and New Jersey are each interested in its maintenance. The Lazaretto, just below Philadelphia, is not located at a safe distance from the shore, nor is it possible in the Delaware River to find a site for a quarantine station free from objection. The Philadelphia Board of Health and the State boards of health of Pennsylvania and New Jersey and the Delaware health authorities have recommended and urged the proper equipment of this station. There is an iron pier inside the breakwater owned by the Government that could be utilized when required. A steam-tug is necessary, not only for boarding purposes, but for the removal of the sick and for the maintenance of a patrol to prevent communication between vessels in quarantine and vessels at anchor. This breakwater is a port of call, where vessels from foreign ports lie to await orders to destination.

The "disinfecting machine" estimated for this and other quarantines is a machine on a tug-boat as is now used by the Louisiana Board of Health. It is believed by most sanitary authorities to be the best in the world. Its use admits of the most speedy disinfection and restoration of the vessel to the commercial fleet. Drying chambers for ships' bedding, sailors' luggage, &c., can be provided for when the warehouses are built.

\* CAPE CHARLES, VIRGINIA.

Purchase of site.....	\$5,000
Construction of wharf.....	3,000
Hospital buildings and officers' quarters.....	37,000
Floating disinfecting machinery.....	25,000
Steam-tug.....	30,000
Annual expenses.....	12,000
Total.....	112,000

This station is necessary for the quarantine service of the District of Columbia, Virginia, and Maryland. In the latter State there is a small, poorly equipped station at Hawkins' Point, on the Patuxent, 7 miles below Baltimore, but no protection is afforded the eastern shore of Maryland, nor the point between the bay and the Potomac. All points on the Potomac, Rappahannock, and James Rivers are now without quarantine facilities other than the present temporary station at the Capes. Fisherman's Island, which has been offered to the Government for \$5,000, has been chosen as the best site for the quarantine. The character of the shifting sands and difficult foundation makes it necessary to ask for more money for buildings than at some other places. Like the Breakwater, Hampton Roads is also a place of call.

\*SAPELO, SOUTH ATLANTIC STATION.

(Site owned by the Government.)

Disinfecting machinery.....	\$20,000
Warehouse and wharf.....	10,000
Small boats.....	500
Annual expenses.....	8,000
<b>Total.....</b>	<b>38,500</b>

This station is intended as a refuge station for the South Carolina, Georgia, and Florida coasts. The business of first boarding is done by the local health inspectors at Charleston, Savannah, Brunswick, Fernandina, and other ports interested, and when a vessel is to be quarantined she is ordered to Sapelo Station for that purpose. No steam-tug is deemed necessary at this station. The island (Blackbeard) on which the quarantine is located is owned by the Government. The estimated annual expenses are less than either the Breakwater or Cape Charles Station, because the business will be less and no steamboat will be required. The boards of health on the South Atlantic now use this station as above indicated, although imperfectly equipped, and all attempts to suspend it have been met by repeated protests.

\*GULF QUARANTINE (FORMERLY SHIP ISLAND).

Appropriation for hospital and appliances already made, and site provided for by special act.....	\$45,000
Annual running expenses to be appropriated.....	15,000
<b>Total.....</b>	<b>60,000</b>

This station is the refuge station for the entire Gulf coast west of Pensacola. A board has been detailed to select the site under the recent act of Congress directing the removal of the station, and the general expenses are provided for under that act. Government land will doubtless be chosen for the site.

NEAR KEY WEST, FLA.

Disinfecting machinery.....	\$20,000
Purchase of site (contingent).....	5,000
Warehouse and wharf.....	10,000
Small boats.....	500
Annual expenses.....	10,000
Steam-tug.....	30,000
Hospital buildings and officers' quarters.....	12,500
<b>Total.....</b>	<b>88,000</b>

This station is required on account of the rapidly growing commerce with Cuba, the West Indies, and the Central American ports, nearly all of which are more or less constantly afflicted with yellow fever. The recent disastrous epidemic of yellow fever at Tampa and Key West is an evidence of what may be expected if prompt measures are not at once taken to establish a quarantine station at this point. The Mississippi Delta Station is too far away to properly serve the west coast of Florida, and when it is remembered that at present a person in the incubative stage of yellow fever may pass from Havana to any of the interior cities, the necessity for a careful inspection at this outpost during the dangerous season is apparent. The estimate for the site is made contingent, because inquiry may show that there are already sites owned by the Government. A steam-tug is necessary here for boarding purposes, and to carry supplies to the key that may be selected for the station.

SAN DIEGO, CAL.

Purchase of site.....	\$5,000
Disinfecting machinery.....	20,000
Warehouse and wharf.....	10,000
Small boats.....	500
Annual expenses.....	10,000
Hospital buildings and officers' quarters.....	10,000
<b>Total.....</b>	<b>55,500</b>

This station is necessary on account of the steadily increasing commerce with the Mexican, South American, and Central American coasts. Great alarm has been felt recently on account of the severe and wide-spread epidemic of cholera now existing in Chili, which disease has shown its usually high mortality. During the yellow-fever epidemic, which prevailed recently on the Mexican coast, this port was repeatedly threatened, and the danger is likely to increase rather than diminish. The harbor, the only natural one belonging to the United States south of San Francisco, is the first American port of refuge for American vessels in South Pacific waters, and on this account receives a proportionately large shipping, and since the establishment of interior railway connections the shipping at this port has largely increased.

## SAN FRANCISCO, CAL.

(Site owned by the Government.)

Disinfecting machinery.....	\$20,000
Warehouse and wharf.....	10,000
Steam-tug.....	30,000
Small boats.....	1,000
Hospital buildings and officers' quarters.....	24,000
Annual expenses.....	18,000
<b>Total.....</b>	<b>103,000</b>

The necessity of this station has long been recognized, and has been frequently recommended by the Department, and a special report on this station has recently been made to the committee. A site was selected by a board consisting of one medical officer each from the Army, Navy, and Marine-Hospital Service. The board considered a certain portion of Angel Island, now owned by the Government, to be the most suitable place for its establishment. Owing to the great amount of work required to be done the annual expenses will be greater than at most of the other quarantines. There is no local quarantine, and a vessel must lie in the harbor with the sick on board. The local authorities are unanimous in urging the establishment of this station.

## PORT TOWNSEND, WASHINGTON TERRITORY.

Purchase of site.....	\$5,000
Disinfecting machinery.....	20,000
Warehouse and wharf.....	10,000
Small boats.....	500
Annual expenses.....	10,000
Hospital buildings and officers' quarters.....	10,000
<b>Total.....</b>	<b>55,500</b>

This station is necessary on account of its great distance from San Francisco, and the fact of its being the entrepôt to the populous Puget Sound country and the already great and increasing commerce. With the development of Alaska, and the increasing business of the North Pacific Railway, the necessity for the establishment of this station will increase each year.

From this statement it appears that Dr. Hamilton recommends the erection and thorough equipment of seven quarantine stations in addition to the one already provided for at the mouth of the Mississippi River, as follows:

Delaware Breakwater; Cape Charles, Va.; Sapelo Sound; Key West, Fla.; San Diego, Cal.; San Francisco, Cal., and Port Townsend, Oregon.

The estimated aggregate cost of construction and equipment of these quarantine stations, including the one at the mouth of the Mississippi River, is \$489,500, and the estimated aggregate annual cost of maintaining them is \$93,000.

Believing, as the committee does, that it is the duty of Congress to so regulate commerce as to prevent the introduction of contagion from foreign countries into the United States, the accompanying bill is reported, with the recommendation that it pass.

*Nantucket.*—A dispatch in the New York Herald, of March 30, reports the occurrence of a suspected sporadic case of cholera at the Island of Nantucket, from the wrecked British steamer "Canonbury."

JOHN B. HAMILTON,  
*Supervising Surgeon-General, Marine-Hospital Service.*

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
              { No. 14. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., April 6, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended April 6, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended March 17 corresponded to an annual rate of 20.3 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Leicester, viz., 12.8, and the highest in Blackburn, viz., 31.6 a thousand. Small-pox caused 18 deaths in Sheffield, 2 in Bristol, 2 in Manchester, and 2 in Huddersfield.

*London.*—One thousand six hundred and four deaths were registered during the week, including measles, 22; scarlet fever, 25; diphtheria, 22; whooping-cough, 92; enteric fever, 10; typhus, 1; diarrhoea and dysentery, 10. Diseases of the respiratory organs caused 458 deaths; and different forms of violence, 59. The deaths from all causes corresponded to an annual rate of 19.5 a thousand. In greater London 2,031 deaths were registered, corresponding to an annual rate of 19.2 a thousand of the population. In the "outer ring" 30 deaths from whooping-cough, 7 from scarlet fever, 6 from diphtheria, and 6 from measles were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended March 17 in the 16 principal town districts of Ireland was 29.4 a thousand of the population. The lowest rate was recorded in Newry, viz., 10.5, and the highest in Londonderry, viz., 46.4 a thousand. In Dublin 196 deaths were registered, including 1 from diphtheria; measles, 5; scarlet fever, 3; typhus, 3; and enteric fever, 4.

*Scotland.*—The deaths registered in 8 principal towns during the week ended March 17 corresponded to an annual rate of 21.0 a thousand of the population, which is estimated at 1,299,000. The lowest mortality



was recorded in Greenock, viz., 10.1, and the highest in Glasgow, viz., 26.9 a thousand. The aggregate number of deaths registered from all causes was 531, including 9 from measles; diphtheria, 5; scarlet fever, 3; whooping-cough, 16; fever, 5; and diarrhoea, 9. The death rate during the week ended March 10 was 24.2.

*Montevideo.*—Eight hundred and eighteen deaths were registered during the two months ended January 31, 1888, including 40 from small-pox and 20 from enteric and typhus fever.

*Callao.*—The United States consul, in his dispatch dated March 3, 1888, states that “from the last report of Doctor Matto, the medical representative of the Government of Peru in Chili, it would appear that the ravages of the cholera in that republic are nearly concluded. Under date of the 1st instant, Doctor Matto reports by cable: ‘Have returned from the south. Cholera declining. Has disappeared at Concepcion, Angol, Angeles, Chillan, Parral, and San Fernando. Cases still at Loto and Coronel. None at Talcahuano. At La Serena (to the north), Santiago, and Valparaiso, decreasing.’ The condition of the public health at this port and Lima continues to be satisfactory.”

*Santiago de Cuba.*—The sanitary inspector reports for the week ended March 24 one death from small-pox at the military hospital, and several cases of varioloid in the town.

*Havana.*—Three deaths from yellow fever and 14 from small-pox are reported for the week ended March 24, 1888.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Glasgow.....	March 17.....	545,678	272	.....	.....	.....	.....	.....	1	5
Warsaw.....	March 10.....	439,174	201	.....	.....	4	.....	.....	2	4
Calcutta.....	February 18.....	433,219	252	50	.....	.....	.....	.....	.....	.....
Rome.....	February 11.....	382,973	242	.....	.....	4	.....	3	.....	1
Copenhagen.....	February 28.....	300,000	130	.....	.....	.....	.....	.....	.....	7
Copenhagen.....	March 6.....	300,000	135	.....	.....	.....	.....	1	6	4
Munich.....	March 3.....	275,000	154	.....	.....	.....	.....	.....	1	6
Edinburgh.....	March 10.....	262,733	95	.....	.....	.....	.....	1	1	1
Palermo.....	March 17.....	230,000	125	.....	.....	.....	2	.....	3	2
Belfast.....	March 17.....	227,022	137	.....	.....	.....	.....	1	2	1
Genoa.....	March 17.....	179,337	108	.....	.....	6	.....	.....	.....	3
Leipsic.....	March 17.....	170,000	69	.....	.....	.....	.....	.....	.....	7
Trieste.....	March 10.....	154,500	120	.....	.....	1	.....	.....	.....	1
Toronto.....	March 24.....	130,000	38	.....	.....	.....	.....	.....	.....	4
Toronto.....	March 31.....	130,000	18	.....	.....	.....	.....	.....	.....	.....
Bremen.....	March 15.....	122,000	37	.....	.....	.....	.....	1	.....	.....
Havre.....	March 10.....	112,074	110	.....	.....	.....	.....	.....	.....	.....
Havre.....	March 17.....	112,074	104	.....	.....	3	.....	2	.....	.....
Barmen.....	March 17.....	109,000	42	.....	.....	7	.....	1	1	2
Leith.....	March 10.....	74,320	26	.....	.....	.....	.....	.....	.....	3
Mayence.....	March 3.....	65,701	36	.....	.....	.....	.....	.....	1	1
Cienfuegos.....	March 19.....	40,573	38	.....	.....	.....	.....	.....	.....	.....
Sagua la Grande.....	March 17.....	15,605	11	.....	.....	6	.....	.....	.....	.....



## UNITED STATES.

*Ship Island.*—The Secretary of the Treasury has approved the recommendation of the board designated under the act of Congress dated March 5, 1888, that the national quarantine station on Ship Island be removed to North Chandeleur Island, in the Gulf of Mexico.

The medical officer in charge of the United States quarantine station at Ship Island reports that the Norwegian barkentine "Professor Lintner," from Port de France, Martinique, arrived at Pascagoula, Miss., and was sent to the quarantine station at Ship Island on the 30th ultimo, with two cases of small-pox on board. The sick have been removed to hospital, and the crew vaccinated. The vessel has been fumigated and cleansed, and is now undergoing quarantine.

*Louisiana.*—The following resolutions have been adopted by the State board of health:

*Be it resolved by the Board of Health of the State of Louisiana,* That its secretary be instructed to respectfully request the governor of the State to issue his proclamation of quarantine in accordance with the following recommendations: Such quarantine to go into effect from and after the 20th day of April, 1888, simply for inspection and fumigation—this to remain in force until the 1st day of June, unless changed by direction of this board; from and after that time all vessels subject to quarantine treatment shall be detained for observation, as hereinafter provided:

All vessels arriving at the several quarantine stations in the State, together with their crews, passengers, and their cargoes, shall be subjected to inspection by the quarantine officers at the said stations.

All vessels, together with their cargoes, crews, passengers, and baggage, arriving at the Mississippi quarantine station from intertropical American and West Indian ports shall be subjected to thorough maritime sanitation, according to the following schedule:

First class.—Vessels arriving from non-infected ports.

Second class.—Vessels arriving from suspected ports.

Third class.—Vessels arriving from ports known to be infected.

Fourth class.—Vessels which, without regard to port of departure, are infected—that is to say, vessels which have yellow fever, cholera, or other contagious or infectious diseases on board at time of arrival, or have had same on voyage.

Vessels of the first class to be subjected to necessary maritime sanitation at the upper quarantine station, without detention of either vessels or persons longer than may be necessary to place such vessels in perfect sanitary condition.

Vessels engaged in the tropical fruit trade and coming from known non-infected localities, and whose sanitary condition and health record are satisfactory, may be allowed to pass the quarantine station after inspection, subject, however, to such sanitary treatment and other measures as the board of health may prescribe.

Vessels of the second and third classes to undergo the same conditions, together with detention for observation for a period of five full days from hour of arrival in quarantine.

Vessels of the fourth class to be remanded to the lower quarantine station, there to undergo sanitation and detention of vessels and persons such length of time as the board of health may order.

The five days' detention, as above provided, shall apply to all ports of the Gulf of Mexico and the Caribbean Sea, exception being made in regard to vessels coming from ports south of the equator, whose period of detention shall be three days from time of disinfection.

All vessels arriving from Mediterranean or other ports known or suspected to be infected with cholera, or which may hereafter become infected, shall be subjected to maritime sanitation and such detention as the board of health may determine.

Vessels arriving from the above-named ports and places, and belonging to the second, third, or fourth class, as set forth in the foregoing schedule, shall not be allowed to pass the Rigolets or Atchafalaya quarantine stations, or other state quarantine stations which may hereafter be established, without having undergone a period of detention of forty days and thorough cleansing and disinfection.

*New York.*—The medical officer in charge of the Marine-Hospital Service reports that a seaman sick with small-pox from the steamship "City of Augusta," a vessel plying between New York and Savannah, applied for hospital treatment on the 2d instant, and that he was transferred in the quarantine boat to the detention hospital, East River. The forecabin of the vessel has been thoroughly fumigated, the old bedding burned, sixteen of the crew have been vaccinated, and precautions have been taken to prevent the spread of the disease on shore.

*San Francisco.*—The secretary of the health department reports, under date of March 27, 1888, that "there have been 21 cases of small-pox here during this month, and 4 deaths. No cases have been reported since the 21st instant."

By order of the Supervising Surgeon-General:

GEO. W. STONER,

*Surgeon, Marine-Hospital Service.*

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 15. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., April 13, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended April 13, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended March 24 corresponded to an annual rate of 21.1 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Huddersfield, viz., 14.8, and the highest in Plymouth, viz., 37.6 a thousand. Small-pox caused 17 deaths in Sheffield, 1 in Bristol, 2 in Blackburn, 2 in Hull, 1 in Nottingham, 1 in Manchester, and 1 in Sunderland.

During the year 1887, 191,887 deaths were registered, being in the proportion of 20.8 a thousand of the population, and including 332 deaths from small-pox, 278 of which occurred in Sheffield.

*London.*—One thousand six hundred and fifty-five deaths were registered during the week, including measles, 18; scarlet fever, 24; diphtheria, 17; whooping-cough, 80; enteric fever, 10; typhus, 1; diarrhoea and dysentery, 6. Diseases of the respiratory organs caused 457 deaths; and different forms of violence, 64. Four cases of suicide were registered. The deaths from all causes corresponded to an annual rate of 20.2 a thousand. In greater London 2,064 deaths were registered, corresponding to an annual rate of 19.5 a thousand of the population. In the "outer ring" 23 deaths from whooping-cough; scarlet fever, 7; diphtheria, 8; and fever, 6, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended March 24 in the 16 principal town districts of Ireland was 30.8 a thousand of the population. The lowest rate was recorded in Sligo, viz., 9.6, and the highest in Waterford, viz., 48.6 a thousand. In Dublin 201 deaths were registered, including 4 from whooping-cough; measles, 5; scarlet fever, 4; typhus, 1; dysentery, 2; diarrhoea, 1; and erysipelas, 1.

*Catania, Italy.*—Four thousand and thirty-one deaths were registered during the year 1887, including 679 from cholera.



## UNITED STATES.

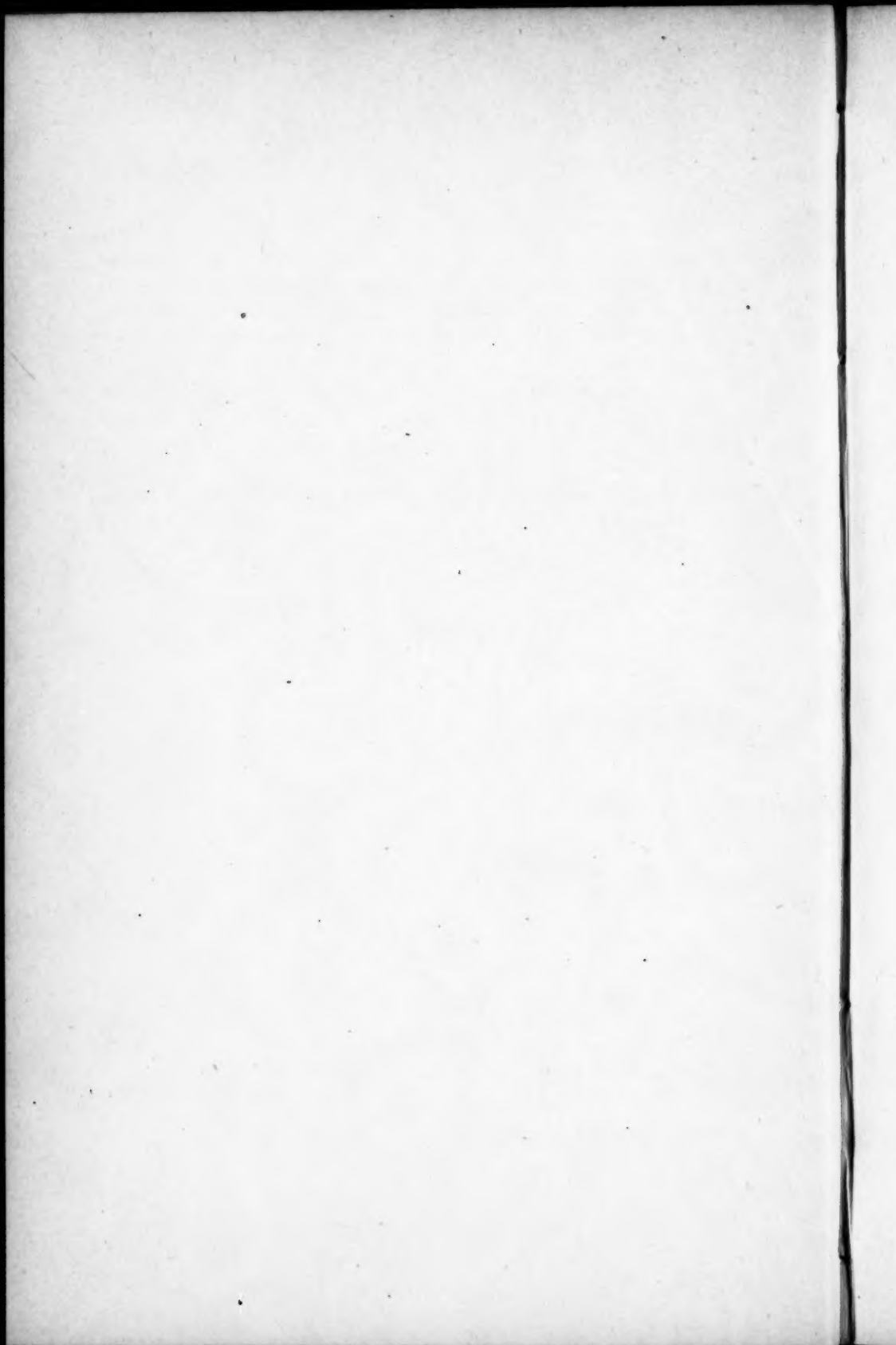
*Charleston.*—The medical officer in charge of the Marine-Hospital Service reported, under date of the 7th instant, that "a seaman from the schooner 'Lillie F. Schmidt,' out of New York on the 19th ultimo, presented himself for treatment at this office to-day. I found him to be suffering with small-pox, on the fourth day of the eruption, and have reported the fact to the health authorities of the city, who have taken charge of the case. It is probable that he will be sent to the quarantine station."

The vessel was immediately towed to the quarantine station in the harbor, by direction of the health officer, and on the 9th instant sent to the United States quarantine station at Sapelo Sound, where the vessel is now undergoing quarantine.

*Norfolk.*—The medical officer in charge of the Marine-Hospital Service reported, under date of the 5th instant, the removal of a seaman from St. Vincent Hospital to the city pest-house, suffering with small-pox. The patient came from New York on the schooner "Henry Parker." The vessel and crew are now undergoing quarantine.

By order of the Supervising Surgeon-General:

GEO. W. STONER,  
*Surgeon, Marine-Hospital Service.*





## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 16. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., April 20, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended April 20, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended March 31 corresponded to an annual rate of 21.5 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 15.1, and the highest in Preston, viz., 33.4 a thousand. Small-pox caused 19 deaths in Sheffield, 1 in Bristol, 3 in Blackburn, 1 in Hull, 2 in Nottingham, and 1 in Manchester.

*London.*—One thousand six hundred and sixty-eight deaths were registered during the week, including measles, 17; scarlet fever, 40; diphtheria, 15; whooping-cough, 93; enteric fever, 13; typhus, 1; diarrhoea and dysentery, 16. Diseases of the respiratory organs caused 460 deaths; and different forms of violence, 75. Two suicides were registered. The deaths from all causes corresponded to an annual rate of 20.3 a thousand. In greater London 2,109 deaths were registered, corresponding to an annual rate of 19.9 a thousand of the population. In the "outer ring" 41 deaths from whooping-cough; scarlet fever, 5; diphtheria, 4; and fever, 4, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended March 31 in the 16 principal town districts of Ireland was 33.5 a thousand of the population. The lowest rate was recorded in Dundalk, viz., 13.1, and the highest in Kilkenny, viz., 76.1 a thousand. In Dublin 211 deaths were registered, including 8 from whooping-cough; measles, 3; scarlet fever, 2; diphtheria, 1; enteric fever, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week ended March 31 corresponded to an annual rate of 23.7 a thousand of

the population, which is estimated at 1,299,000. The lowest mortality was recorded in Perth, viz., 16.0, and the highest in Glasgow, viz., 27.4 a thousand. The aggregate number of deaths registered from all causes was 509, including 4 from measles; scarlet fever, 6; diphtheria, 8; whooping-cough, 17; fever, 5.

*Havana*.—Six deaths from yellow fever and 18 from small-pox are reported for the week ended April 7, 1888.

*Ceará, Brazil*.—One hundred and twenty-seven deaths were registered during the month of February, including 4 from yellow fever.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris .....	March 31 .....	2,260,945	1,122	.....	.....	4	.....	9	4	46
Glasgow .....	March 31 .....	545,678	277	.....	.....	.....	.....	1	4	2
Warsaw .....	March 24 .....	439,174	202	.....	.....	4	.....	.....	3	6
Calcutta .....	March 3 .....	433,219	228	52	.....	.....	.....	.....	.....	.....
Copenhagen .....	March 20 .....	300,000	136	.....	.....	.....	.....	.....	5	3
Munich .....	March 24 .....	275,000	187	.....	.....	.....	.....	.....	1	4
Edinburgh .....	March 17 .....	262,733	87	.....	.....	.....	.....	.....	1	.....
Palermo .....	March 31 .....	250,000	94	.....	.....	.....	.....	.....	3	.....
Genoa .....	March 31 .....	179,397	92	.....	.....	4	.....	.....	.....	2
Trinidad .....	March 10 .....	178,270	19	.....	.....	.....	.....	.....	.....	.....
Stuttgart .....	March 31 .....	125,510	50	.....	.....	.....	.....	.....	.....	.....
Bremen .....	March 24 .....	122,000	44	.....	.....	.....	.....	.....	.....	.....
Havre .....	March 31 .....	112,074	81	.....	.....	.....	.....	1	.....	2
Pernambuco .....	March 13 .....	110,000	92	.....	1	4	1	3	.....	.....
Mayence .....	March 24 .....	65,701	27	.....	.....	.....	.....	.....	.....	1
Cadiz .....	March 31 .....	65,028	43	.....	.....	.....	.....	.....	.....	.....
Guayaquil .....	March 11 .....	30,000	73	.....	2	5	.....	33	.....	.....
Guayaquil .....	March 11 .....	30,000	70	.....	3	5	.....	.....	.....	.....
Gibraltar .....	March 25 .....	23,631	9	.....	.....	.....	.....	.....	.....	1
Kingston, Canada .....	April 13 .....	16,216	9	.....	.....	.....	.....	.....	.....	.....
Cape Haytien .....	March 31 .....	15,000	6	.....	.....	.....	.....	.....	.....	.....
Cartagena, Cola .....	March 31 .....	13,000	8	.....	.....	.....	.....	.....	.....	.....
Matamoras .....	April 7 .....	12,000	8	.....	.....	.....	.....	.....	.....	.....
Turk's Island .....	March 29 .....	5,000	4	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

*Charleston, S. C.*—A telegram received under date of the 18th instant, relative to the schooner "Lillie F. Schmidt," stated that "the small-pox-infected schooner 'Lillie F. Schmidt' did not go to Sapelo, as ordered, but is reported to have sailed for Baltimore." The health officer at Baltimore was immediately notified by telephone from this bureau.

*Connecticut*.—One thousand one hundred and seventy deaths were registered in 153 cities and towns in Connecticut, having an aggregate population of 701,937, during the month of March, 1888, corresponding to an annual rate of 20 a thousand. The deaths include measles,

4; scarlet fever, 16; cerebro-spinal fever, 16; diphtheria and croup, 39; whooping-cough, 7; and enteric fever, 11.

*California.*—One thousand and sixty-six deaths were registered in 87 cities and towns in California, having an aggregate population of 734,750, during the month of March, 1888, corresponding to an annual rate of 17.4 a thousand. The 1,066 deaths included small-pox, 15; diphtheria, 28; scarlet fever, 10; measles, 24; whooping-cough, 3; and enteric fever, 18.

*Philadelphia, Pa.*—*Small-pox.*—Sixty cases and four deaths were reported up to April 18.

*New York, N. Y.*—*Small-pox.*—Seventy-nine cases were reported in New York on the 19th instant.

*Brooklyn, N. Y.*—*Small-pox.*—An official report, dated April 20, states that there are 38 cases in the county hospital that were removed from the city. Three cases quarantined in city. Six deaths at hospital last week and 1 death in the city.

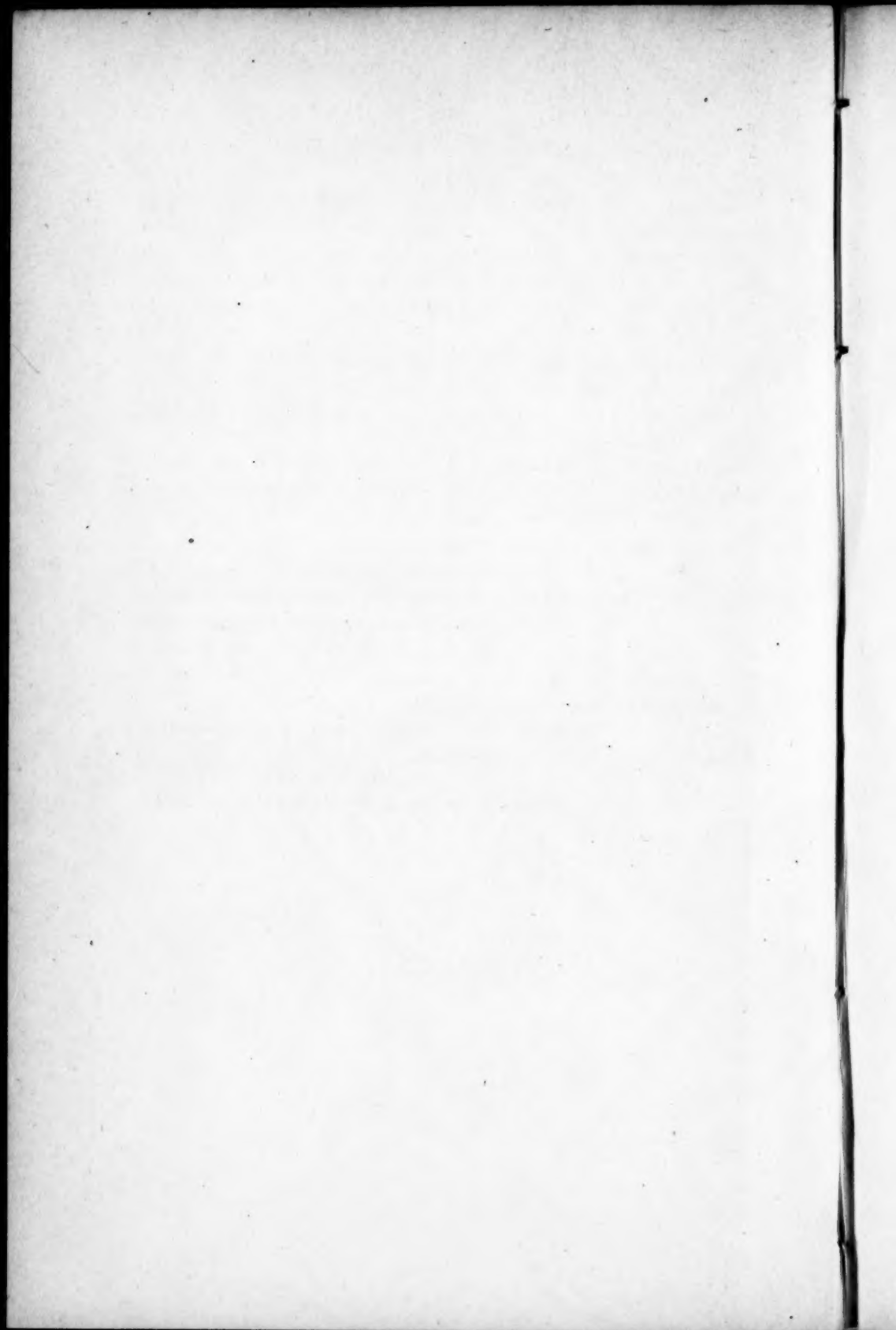
*Jersey City, N. J.*—No cases of small-pox have been reported since March 30. The record up to that time was 38 cases and 2 deaths.

*Florida.*—A late inspection at Micanopy, Plant City, and Bartow, has proved the recent existence of yellow fever there, and that several other points in the southern and western portion of the State are to be looked upon as suspicious.

NOTICE.—All State and local boards of health are respectfully requested to exchange reports regularly.

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 17. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., April 26, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended April 26, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended April 7 corresponded to an annual rate of 19.9 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 14.8, and the highest in Manchester, viz., 29.7 a thousand. Small-pox caused 14 deaths in Sheffield, 1 in Halifax, 1 in Leeds, and 1 in Manchester.

*London.*—One thousand five hundred and ninety-three deaths were registered during the week, including measles, 16; scarlet fever, 20; diphtheria, 16; whooping-cough, 89; enteric fever, 20; diarrhoea and dysentery, 17. The deaths from all causes corresponded to an annual rate of 19.4 a thousand. In greater London 1,977 deaths were registered, corresponding to an annual rate of 18.7 a thousand of the population. In the "outer ring" 27 deaths from whooping-cough; scarlet fever, 5; and diphtheria, 8, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended April 7 in the 16 principal town districts of Ireland was 27.2 a thousand of the population. The lowest rate was recorded in Sligo, viz., 9.6, and the highest in Drogheda, viz., 46.5 a thousand. In Dublin 188 deaths were registered, including 4 from whooping-cough; measles, 5; scarlet fever, 3; typhus, 2; enteric fever, 3.

*Scotland.*—The deaths registered in 8 principal towns during the week ended April 7 corresponded to an annual rate of 21.8 a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 11.2, and the highest in Aberdeen, viz., 26.1 a thousand. The aggregate number of deaths registered from all causes was 551, including 10 from measles; scarlet fever, 3; diphtheria, 4; whooping-cough, 26; fever, 5; and diarrhoea, 3.

*Netherlands.*—The deaths registered in the principal cities of the Netherlands, having an aggregate population of 1,129,676, during the month of February, 1888, corresponded to an annual rate of 29.9 a thousand. The lowest rate was recorded in Dordrecht, viz., 21.5, and the highest in Utrecht, viz., 37.7.

*Singapore.*—Three hundred and twenty-nine deaths were registered during the month of February, 1888, including 3 from cholera; small-pox, 8; and fever, 89.

*Marseilles.*—One thousand one hundred and nine deaths were registered during the month of March, 1888, including small-pox, 7; enteric fever, 25; diphtheria and croup, 54; and measles, 34.

*Martinique.*—The United States consul, under date of April 3, reports that "from the 15th up to the 31st of March there have been 466 new cases of small-pox at St. Pierre and its environs, and 161 deaths therefrom. At Port de France the disease has almost entirely died out, and here it seems to be diminishing. It still rages in the outlying districts in the country, but I cannot get the statistics."

There were 734 cases and 193 deaths reported from March 1 to 15, inclusive.

*Santiago de Cuba.*—One death from yellow fever at the military hospital is reported for the week ended April 14, 1888.

*Havana.*—Seven deaths from yellow fever and 15 from small-pox are reported for the week ended April 14.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—					
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.
Glasgow.....	April 7.....	545,678	246					1	2
Warsaw.....	March 31.....	439,174	203			5			4
Amsterdam.....	March 31.....	389,916	176					1	1
Amsterdam.....	April 7.....	389,916	148						
Munich.....	March 31.....	275,000	149					1	3
Edinburgh.....	March 31.....	262,733	115						
Palermo.....	April 7.....	250,000	105						8
Belfast.....	March 31.....	227,022	183					1	
Genoa.....	April 7.....	179,407	96			4	3		
Trieste.....	March 24.....	154,500	112			1			
Trieste.....	March 31.....	154,500	110			4			
Stuttgart.....	April 7.....	125,510	58						
Bremen.....	March 31.....	122,000	43						1
Barmen.....	March 31.....	109,000	43						
Leghorn.....	April 8.....	101,718	56						
Merida, Yucatan.....	March 27.....	48,832	43					2	
Merida, Yucatan.....	April 3.....	48,832	39						
Cienfuegos.....	April 9.....	40,573	22		1	7			
Gibraltar.....	April 1.....	23,631	11						
Curacao.....	April 7.....	25,000	5						
Sagua la Grande.....	April 7.....	15,605	7			2			
Antigua.....	April 1.....	15,847	13						
Cartagena, Col.....	April 7.....	13,000	8						
Laguayra.....	April 7.....	7,428	3						



## UNITED STATES.

*Boston, Mass.—Small-pox.*—A case of small-pox was admitted to the U. S. marine hospital near Boston, April 26. The disease was contracted in New York. An additional case was reported in Boston on the same date.

*Key West—Small-pox.*—Three cases and 1 death are reported for the ten days ended April 14, 1888.

*Ship Island Quarantine Station.—Small-pox.*—The medical officer in charge reports that a new case developed on the 15th instant among the crew of the Norwegian barkentine "Professor Lintner," now in quarantine.

The Secretary of the Treasury has issued the following order:

"In accordance with the terms of the act of Congress, dated March 5, 1888, authorizing the selection of an island in the Gulf of Mexico, or in such pass in the Mississippi Delta as may be selected by the Secretary of the Treasury, for quarantine purposes, and the board appointed for the purpose of selecting said site having recommended North Chandeleur Island, it is hereby ordered that so much of said island as may be necessary is hereby set apart for quarantine purposes: *Provided*, That the reservation necessary for the purpose of maintaining a light-house shall not be interfered with."

*Sapelo Quarantine Station.*—The medical officer in charge reports under date of April 20, 1888, that the American schooner "Lillie F. Schmidt," from Charleston, with small-pox on board, has put into Sapelo, and did not therefore go North as she had previously intended.

*Portland, Me.—Small-pox.*—Two cases of small-pox were reported under date of the 23d instant.

*Cape Charles.*—Quarantine was opened at this station on the 21st instant.

*Florida.—Yellow fever.*—The following official reports are published for the information of health officers:

U. S. MARINE-HOSPITAL SERVICE,  
DISTRICT OF THE GULF,

*Port of Key West, Fla., Surgeon's Office, February 10, 1888.*

GENERAL: I have thought for some weeks that it might be proper for me to make you a personal report in regard to some rumors that cases of yellow fever are occurring upon the main-land. The information coming to me being mainly from local sources, and noticing that the report of Dr. Wyly in the Weekly Abstract of January 20 was rather uncertain, I have hesitated to do so, not wishing to appear as an alarmist.

It seems probable, however, that yellow fever is latent in Florida, and, with the approach of warm weather, danger may be apprehended from its spread northward. Cases of black-vomit are said to have occurred at Sanford, and a lady died a few days ago at Tampa with

"acute Bright's disease," while a relative here asserts positively that it was yellow fever. A private letter from Dr. Caldwell states that there will be trouble "when the flowers bloom in the spring;" so that, taking it all together, there seem to be some grounds for apprehension. The weather has not been sufficiently cold to kill out the disease, while some of the local physicians either do not know or do not care to recognize yellow fever when they see it, which adds to the danger of its vivification. Possibly a quiet inspection from Palatka to Manatee, in a month or so by a competent man, would serve to give you the exact condition of affairs in this section before the opening of the regular quarantine season; but I wish to report the current opinion in this quarter, rather than to make any recommendations.

With respect, very sincerely yours,

A. H. GLENNAN,  
P. A. Surgeon, M.-H. S.

Dr. JOHN B. HAMILTON,  
Surgeon-General Marine-Hospital Service, Washington.

—  
PLANT CITY, FLA., March 13, 1888.

GENERAL: There is yellow fever at this place, and evidently at other places in the State, of which due report will be made.

Suppressive measures are being instituted here. The death rate is low, and cases generally recover in a short time. The greatest desire is held by the health authorities to not have publicity given to the facts in the case, although rumors are spreading rapidly. No panic exists, and the only anxiety is in relation to the news reaching the general public. It is hoped that the press of Florida will not make prominent notice of the state of affairs.

Drs. J. P. Wall, King Wylly, F. H. Caldwell, J. Y. Porter, and others, advise that no public notice be given until a chance is given for complete checking of the fever here where it is most prevalent. In their view I join for many reasons, and trust that your office will consider this confidential.

The stress of duty and temporary loss of my valise prevent me from writing in detail, and from penning a formal letter.

I hope to take the next steamer for Key West.

Frost this morning.

I am, very respectfully, your obedient servant,

R. D. MURRAY.

Surgeon-General JNO. B. HAMILTON,  
U. S. Marine-Hospital Service, Washington, D. C.

—  
U. S. MARINE-HOSPITAL SERVICE,  
DISTRICT OF THE GULF,

Port of Key West, Fla., Surgeon's Office, March 17, 1888.

GENERAL: I have the honor to state that in obedience to M.-H. S. letters, Nos. 3079 and 3080 (G. W. S.) of February 16, 1888, I came to this port by way of Florida, and in my passage through the State visited De Funiak, Tallahassee, Jacksonville, St. Augustine, Palatka, Sanford, Apopka, Lakeland, Plant City, and Tampa. Having gained sufficient information, in order to lose no more time I did not visit Kissimmee, Bartow, Dade City, Micanopy, Gainesville, and Manatee,

as I wished to. A full investigation would have consumed six weeks, which time I could not consider at my disposal.

That I sought for unfavorable facts and had no right to make my mission known, made it difficult to get prompt information. The rumors of doubtful fevers, and the frost and ninety-day theories compelled nearly all to be reticent, or, at least, unwilling talkers.

I could get no hint of yellow fever on the line of the railroads through the north end of the State. Some rumors were floating at Sanford of the disease having been at Pensacola during the autumn.

At Jacksonville a continued fever, affecting the highest circle of society *only*, has been prevalent for over two months, resulting in from 6 per cent. to 8 per cent. of deaths, which presents the general characteristics of enteric fever. This name is given by Doctor R. P. Daniel, who has treated most of the cases, and is concurred in by Doctors C. J. Kenworthy, J. D. Fernandez, and A. W. Knight. I fancy that Doctor N. Mitchell considers some of the cases more seriously, and know that Doctor J. C. L'Engle (not a practitioner) holds the idea of a yellow-fever wave overspreading the city.

Similar cases had lately occurred in St. Augustine and Mandarin. In spite of local prejudices and a few unproven charges which arouse suspicion, I think the fever at Jacksonville is enteric, but few doctors in South Florida will join in my opinion.

Dr. J. G. Ames claimed that Palatka had cases of yellow fever in the autumn, but was now free from all suspicion or risk of infection.

Doctors Caldwell and Wylly, at Sanford, insist that the town of Sanford had from 100 to 150 cases in the autumn with 6 deaths, and that mild cases are still occurring as late as my visit—the 6th and 7th—and later, one on the 13th. Georgetown and Mellonville, villages near Sanford, present suspicion. Doctor Herndon bitterly condemns the view of Doctors Wylly and Caldwell, while Doctor Montgomery unwillingly assents to it.

Apopka and the thickly-settled region around it seem to be free from all hints of past or recent fever.

No suspicion is thrown upon the Indian River country.

Lakeland, the junction of the South Florida and Florida Southern Railroads is prostrate in a business point of view from the presence of imported cases during last fall, but it was impossible for me to get any clue to recent cases from Doctors Perry, Derio, Marshall, Hart, Preston, and Vineyard.

At Plant City, junction of Florida Railway and Navigation Railroad with South Florida Railroad, twenty-two miles east of Tampa, cases have occurred since October 5—say, 120 cases and 9 deaths. The last death (the ninth) on March 11; the last case sickened the same day.

On March 8 Mr. Calhoun convalesced at Box Springs, Talbot County, Ga., from yellow fever engendered during one month's stay in Plant City, he having left for his home about February 27.

Tampa is declared free from fever by Drs. J. P. Wall and J. A. Jackson, but as there has been no radical system of cleansing in vogue, the place is by no means above doubt. The lady referred to by Doctor Glennan as dying of acute Bright's disease, *i. e.*, the wife of Doctor Bruce, evidently died of yellow fever about the 20th of January.

At the urgent request of Doctors Wall and Caldwell I disembarked from the steamer at Tampa on the night of the 12th, and returned to Plant City to supervise some sort of cleaning up of the town. Many

acres of dead wood, brush, and rubbish were cleared off and burned; thorough fumigation of every house in the place was begun; lime and copperas were generally scattered about, and bichloriding of all houses and bedding where sickness had occurred was arranged for. Three days of hard work, and inhalation of sulphur and pine smoke gave me a bronchitis from which I still suffer. Micanopy, on the Florida Railway and Navigation Railroad north of Plant City, and Bartow south of Lakeland, are presumably danger points at present.

It is evident to me, painful as the idea is, that the lines of railroad from Tampa to Jacksonville are at various points infested by *fomites* which will, at the proper time, give all the trouble prophesied by Dr. Caldwell. The region south of the South Florida Railroad seems to be more secure, except Manatee, but is by no means safe.

I cannot think the spasmodic and imperfect cleaning of towns will serve to obviate the recurrence of fever, for there is no power or panic to enforce, or even advise, a general and systematic riddance of all supposable *fomites*, retained air, and niduses. Two weeks' prompt work *now* would minify or avert the danger, but there is no common center of authority or confidence to advise sanitation or to subdue the bitterness of last season's quarantines, follies, and failures.

The governor will not, it is said, call a meeting of the legislature. The medical association will not meet till May. The helpless State Health Protective Association is exploded and bankrupt. I wished for privilege to visit more towns to beg for prompt action, but not caring to ask for it or to take it, will try by private letters to arouse the town authorities to work while some chance offers to avert a summer of terror and death.

I cannot see any good to come from a publication of my opinions. Savannah is already warned, and all the chief cities are on the lookout.

Passed Assistant Surgeon Glennan is entitled to much credit for his forethought and courage in informing you of the expected and perhaps inevitable damage to the State.

I am, very respectfully, your obedient servant,

R. D. MURRAY,

*Surgeon.*

Surgeon-General JNO. B. HAMILTON,

U. S. M.-H. S., Washington, D. C.

JACKSONVILLE, FLORIDA,

April 16, 1888.

SIR: Of course you have known of the existence of yellow fever at Plant City this winter; there have been cases throughout the winter but it has been only until recently that there has been any alarm, and that occasioned, I presume, by the advent of warm weather. I cannot say as to what may be the status of affairs there now, but sent the secretary of my board, Doctor Knight, down to-day and shall be thoroughly posted by the latter part of the week. I am in somewhat of a quandary as to just what shall be done, providing Doctor Knight reports a prevalence of the disease, as I have no doubt he will. I do not think it advisable and shall not quarantine at present. The lesson of last year taught the many difficulties of quarantining at such a distance. It is my opinion that each infected locality should, by an effective cordon, be



isolated. This the counties of Florida cannot do, hence, if such a plan is to be adopted, someone with authority and the means for carrying out such requirements as may be deemed best—yourself must take the matter in hand.

I will make a few general statements. Last fall yellow fever probably existed at many points along the lines of the South Florida Railroad and Florida Railway and Navigation Railroad, and may be developed at any of these points later in the season. The State, as you know, has no State board of health, hence every county acts for itself, thus inflicting upon the community quarantines which fail to meet the requirements for various reasons, and destroys commerce. You are familiar with cases of this kind, and I wish your advice as to what should be done. I have made but few statements as to the conditions here, because I know you are already acquainted with them. Any suggestions you may make I shall be happy to receive. Our board represents the most powerful county in the State, and carries great weight. I am anxious that everything possible to avert a spread of the disease shall be done, and if you can suggest some plan our board will try to carry it into effect. I shall write Governor Perry to-night. Pardon this hastily written letter.

Respectfully,

NEAL MITCHELL, M. D.,

*President Duval County Board of Health.*

Surgeon-General HAMILTON.

[Extract.]

HOUSTON, TEX., April 8, 1888.

"I have learned from private sources that yellow fever still exists in Tampa. No mention being made in your weekly abstracts, upon which I greatly rely, I have decided that a direct question to you whether or not such is the case would relieve me of all doubts upon the subject."

R. RUTHERFORD, M. D.,

*State Health-Officer.*

Dr. Knight's report has not yet been sent by Dr. Mitchell, but an interview with Dr. Knight, published in the *Times-Union* of April 25, states that he found two cases of yellow fever at Plant City, one of which was convalescent and the other likely to prove fatal. The Doctor stated that great activity in the carrying out of the sanitary measures was manifest in the towns visited by him.

*Bartow.*—The municipal authorities deny either that yellow fever is now present, or that there has been any yellow fever at that place.

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*





## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 18. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., May 4, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended May 4, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended April 14 corresponded to an annual rate of 21.9 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Portsmouth, viz., 16.8, and the highest in Manchester, viz., 34.9 a thousand. Small-pox caused 11 deaths in Sheffield, 3 in Blackburn, 1 in Bristol, and 1 in Manchester.

*London.*—One thousand six hundred and ninety-two deaths were registered during the week, including measles, 12; scarlet fever, 17; diphtheria, 19; whooping-cough, 108; enteric fever, 9; diarrhoea and dysentery, 19. The deaths from all causes corresponded to an annual rate of 20.6 a thousand. Diseases of the respiratory organs caused 444 deaths; different forms of violence, 52; and 9 suicides were registered. In greater London 2,075 deaths were registered, corresponding to an annual rate of 19.6 a thousand of the population. In the "outer ring" 18 deaths from whooping-cough; scarlet fever, 5; diphtheria, 10, and measles, 5, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended April 14 in the 16 principal town districts of Ireland was 26.9 a thousand of the population. The lowest rate was recorded in Sligo, viz., 9.6, and the highest in Lurgan, viz., 46.2 a thousand. In Dublin 187 deaths were registered, including 7 from whooping-cough; measles, 3; scarlet fever, 1; typhus, 1; enteric fever, 2.

*Scotland.*—The deaths registered in 8 principal towns during the week ended April 14 corresponded to an annual rate of 20.8 a thousand of

the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 14.7, and the highest in Perth, viz., 30.4 a thousand. The aggregate number of deaths registered from all causes was 526, including 5 from measles; scarlet fever, 4; diphtheria, 3; whooping-cough, 20; fever, 8; and diarrhœa, 9.

*Buenos Ayres.*—The United States consul, in his dispatch dated March 1, 1888, inclosed a copy of a report on the health and hygienic condition of Buenos Ayres, from which it is learned that the population of the city (not including Flores and Belgrano, which have recently been annexed to it) is 424,873. The mortality for the year 1887 reached a total of 12,894 deaths, including cholera, 606; small-pox, 1,290; diphtheria, 975; measles, 126; typhoid fever, 279, and scarlet fever, 606. The deaths from infectious diseases amounted to 26 per cent. of the entire mortality. The consul states that "the people of this country have seemed to have a superstitious opposition to vaccination as an interference with Divine Providence, very few of them ever taking the precaution to be vaccinated, while the municipality have taken very few safeguards against its spread. It has now passed an ordinance making vaccination compulsory, and if it is properly enforced it is probable that the death rate from that horrible disease will hereafter be reduced. \* \* \* With an area of upwards of 12,000 acres, and over 50,000 houses, the city is absolutely without either drainage or sewerage, and this in the face of the fact that it has more than doubled its population during the last fifteen years. In the year 1874 a grand scheme of complete drainage for both streets and houses was inaugurated, and nearly fifteen millions of dollars have already been expended in its construction. The street sewers are now almost ready for use, and would be of some utility were it not that the principal outlet or siphon which is to receive the accumulations of the drains and carry them into the river Plate, about 12 miles below the city, has not yet been commenced. Besides this, not a single house has yet been connected with the street drains. \* \* \* Under these circumstances, the wonder is not that the health of Buenos Ayres is not satisfactory, but that the death rate is not greater than it is. In spite of the want of drainage, however, the city has all these years kept remarkably free from epidemics. Not since 1869, when over 20,000 inhabitants fell victims to the disease, has there been a single case of yellow fever here. In 1873-'74 and last year Asiatic cholera, imported on immigrant steamers, was somewhat prevalent in the city, as well as in other portions of the country, but on neither occasion was there any very decided development or alarming mortality. Perhaps the reason that

Buenos Ayres has thus far been so fortunate in escaping yellow fever, which every summer is so fatal in Rio Janeiro, is the rigid and carefully-guarded quarantine which, on the least suspicion, is maintained against vessels arriving from Brazil. Last year it was not successful in preventing the introduction of cholera from Italy, but with the precautions which it is intended henceforth to adopt against arrivals from infected ports, it is not probable that Buenos Ayres will have a recurrence of that dread disease. Meanwhile the National Congress, at its last session, made provision for selling the unfinished city sewerage works to the highest and best bidder, with proper guarantees for their completion, the purchaser to have all the privileges of collecting sewerage rates that the municipality possessed. I understand that European capitalists are ready at once to assume the works and finish them before another year shall have elapsed. If this be so, we may expect that Buenos Ayres will once more maintain the position which for two centuries and a half it occupied, of being the healthiest city with the best climate of any port in the world."

*Callao.*—The United States consul, in his dispatch dated March 27, 1888, inclosed a copy and translation of the convention signed at Lima, on the 12th March, by the delegates to the American Sanitary Congress convened under the auspices of Peru. The consul states: "I am informed by the Foreign Office that this convention must yet be approved by the Congresses of the contracting Republics, but it is understood that this approbation will be granted, since on the respective delegates were conferred full powers. The stipulation that no further closing of ports shall be resorted to is one of very great importance as regards commercial interests and personal convenience."

The convention contains seventeen articles, and, among other things, the contracting countries agree in declaring exotic pestilential diseases: yellow fever, Asiatic cholera, plague. An infected port, that in which any of said diseases may epidemically exist. A suspected port, that in which appears one or another isolated case of either of the three pestilential diseases; that which may have easy and frequent communication with infected localities; that which does not sufficiently protect itself against infected localities. An infected ship or vessel, that on board of which may have occurred a case of pestilential disease. A suspected ship or vessel, that proceeding from an infected or suspected port, may not have had on board during the voyage any case of pestilential disease; that which, although proceeding from a healthy port, may have touched at one infected or suspected; that which, during the voyage or in distress, may have communicated with a vessel of un-

known infected or suspected procedure; that which may have had on board deaths from no determinate cause, or repeated cases of any disease whatever.

"For the proper carrying out of the sanitary service, an international regulation shall be issued uniforming general measures and those especially applicable to other countries. The contracting countries oblige themselves to establish the lazarettos that may be necessary, and permanent lazarettos are to be located on islands; to establish floating hospitals adjacent to the permanent lazarettos, for the treatment of persons attacked by exotic pestilential diseases on the vessels which may arrive or those already at anchor."

*Havana.*—Four deaths from yellow fever and 10 from small-pox were registered for the week ended April 21, 1888.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris.....	April 14.....	2,260,945	1,082	.....	.....	7	.....	10	4	39
Warsaw.....	April 7.....	439,174	240	.....	.....	4	.....	.....	3	7
Calcutta.....	March 10.....	433,219	240	35	.....	1	.....	.....	.....	.....
Calcutta.....	March 17.....	433,219	251	74	.....	.....	.....	.....	.....	.....
Amsterdam.....	April 14.....	389,916	179	.....	.....	.....	.....	2	.....	.....
Copenhagen.....	April 3.....	300,000	155	.....	.....	.....	.....	.....	3	5
Edinburgh.....	April 14.....	262,733	104	.....	.....	.....	.....	.....	2	2
Palermo.....	April 14.....	250,000	99	.....	.....	.....	.....	1	3	5
Genoa.....	April 14.....	179,421	97	.....	.....	.....	.....	.....	.....	2
Trinidad.....	March 31.....	178,270	43	.....	.....	.....	.....	.....	.....	.....
Toronto.....	April 21.....	130,000	53	.....	.....	.....	.....	.....	1	3
Trieste.....	April 7.....	154,500	100	.....	.....	.....	.....	2	.....	2
Stuttgart.....	April 14.....	125,510	50	.....	.....	.....	.....	.....	.....	.....
Bremen.....	April 7.....	122,000	43	.....	.....	.....	.....	.....	1	.....
Pernambuco.....	April 3.....	110,000	97	.....	.....	.....	.....	2	.....	.....
Barmen.....	April 14.....	109,000	50	.....	.....	.....	.....	.....	.....	2
Leghorn.....	April 15.....	101,718	39	.....	.....	.....	.....	.....	.....	.....
Cadiz.....	April 7.....	65,028	38	.....	.....	.....	.....	.....	.....	.....
Merida.....	April 17.....	48,832	29	.....	.....	.....	.....	.....	.....	.....
Cienfuegos.....	April 16.....	40,573	12	.....	.....	4	1	1	1	1
Port au Prince.....	April 11.....	40,000	20	.....	.....	.....	.....	.....	.....	.....
Callao.....	March 31.....	34,000	.....	.....	.....	.....	.....	.....	.....	.....
Gibraltar.....	April 15.....	23,631	7	.....	.....	.....	.....	.....	.....	.....
St. Thomas.....	April 6.....	15,000	10	.....	.....	.....	.....	.....	.....	.....
Palti, Peru.....	March 31.....	4,000	.....	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

*Philadelphia, Pa.*—*Small-pox.*—Eighty-two cases and 5 deaths were reported up to April 26, 1888.

*Florida.*—Dr. A. W. Knight, in his report referred to in the last Abstract, states that "on the 17th and 18th of April I was at Plant City, Fla. Two cases of yellow fever still remaining. One of these convalescent and out of danger. One case critical on 18th. No other

cases there or at Lakeland, Seffner, Ybor City, or Tampa. Tampa and Ybor City unusually healthy. No cases at that date, either at Bartow or Micanopy. No excitement in any of the towns nearest Plant City. I visited these points per order of the Board of Health of Duval County."

*Key West, Fla.—Small-pox.*—One new case reported during the week ended April 21, 1888.

*Delaware Breakwater U. S. Quarantine.*—Quarantine was opened at this station on the 1st instant.

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*





## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 19. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., May 11, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended May 11, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended April 21 corresponded to an annual rate of 19.9 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton and Derby, viz., 15.7, and the highest in Plymouth, viz., 29.6 a thousand. Small-pox caused 12 deaths in Sheffield, 3 in Hull, 1 in Bristol, 1 in Manchester, and 2 in Oldham.

*London.*—One thousand five hundred and fifty-two deaths were registered during the week, including measles, 18; scarlet fever, 21; diphtheria, 10; whooping-cough, 92; enteric fever, 13; diarrhoea and dysentery, 23. The deaths from all causes corresponded to an annual rate of 18.9 a thousand. Diseases of the respiratory organs caused 363 deaths; different forms of violence, 48; and 12 suicides were registered. In greater London 1,954 deaths were registered, corresponding to an annual rate of 18.4 a thousand of the population. In the "outer ring" 30 deaths from whooping-cough; scarlet fever, 5; and diphtheria, 5, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended April 21 in the 16 principal town districts of Ireland was 26.1 a thousand of the population. The lowest rate was recorded in Dundalk, viz., 8.7, and the highest in Lisburn, viz., 53.2 a thousand. In Dublin 168 deaths were registered, including 5 from whooping-cough; scarlet fever, 3; typhus, 1; diphtheria, 1; enteric fever, 1; and diarrhoea, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week ended April 21 corresponded to an annual rate of 21.2 a thousand of

the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 14.9, and the highest in Paisley, viz., 25.5 a thousand. The aggregate number of deaths registered from all causes was 535, including 9 from measles; scarlet fever, 4; diphtheria, 11; whooping-cough, 17; fever, 10; and diarrhœa, 11.

*Callao.*—The United States consul, in his dispatch under date of April 3, 1888, states that "the last report from the Peruvian medical representative in Chili regarding the progress of the cholera in that republic is dated the 23d of March last, and is as follows: 'Santiago.—No new cases; deaths, 2; 17 sick in hospital. Another lazaretto closed. Valparaiso.—Seven new cases; 1 death; in hospital, 34. Ovalle, Viculla, few cases. At Serena it has disappeared. Lazaretto at Concepcion closed. Declining at Lota and Coronel.' This information is the most reassuring that we have received. The public health at Lima and this port continues to be satisfactory, but interdiction of vessels from Chili is still maintained.

"April 13, 1888.—The latest cable reports regarding cholera in Chili from the medical representative of this government are very satisfactory. Under date of the 11th instant he states that 'at Valparaiso the disease is officially declared to have disappeared;' at Santiago 'only 2 patients in hospital, and the last lazaretto was to be closed on the 11th; at Copiapo, 8 cases.' The authorities here will doubtless follow the precedent established last year and lift the interdiction of vessels from Valparaiso after sixty days have elapsed from the date of the official declaration mentioned."

*Dunfermline, Scotland.*—The United States consul, in his dispatch dated April 16, 1888, states that "several cases of small-pox are reported from Inverkeithing, a village of about fifteen hundred inhabitants, and distant about three miles from Dunfermline. It is believed that the disease was brought to this district by a railway laborer from Leeds or Sheffield, in both of which towns small-pox is said to be alarmingly epidemic. \* \* \* The last case reported is that of a girl who is a member of a large family, and who continues to reside at home. The law does not provide for the removal of such a patient from home without the patient's consent."

*Copenhagen.*—The United States consul, in his dispatch dated April 21, 1888, transmits copies of notices issued by the Danish Government respecting regulations in second part of the law with reference to the importation into the country of epidemic diseases, dated July 2, 1880, which are in force until further notice with respect to vessels arriving from ports on the French coast between Nantes and St. Malo, &c.

"According to reports, a small-pox epidemic has broken out in Bretagne, and therefore the aforesaid regulations were at once enforced for vessels arriving from and having been in contact with the above-mentioned ports. It is prohibited to import used linen, wearing apparel, and bed-clothing, if such do not belong to persons' traveling effects, rags, used wadding, carding-wool, paper-shavings, hair, and hides. Quarantine is hereafter ordered for Italian ports on the Adriatic coast between Ortona and Bari, both included. The before-mentioned regulations are hereafter in force from the following places: Ports on the French coast between Nantes and St. Malo, both included. Ports on the Swedish coast between Malmo and Landskrona. All ports in Chili. All ports in Florida. All ports at Jamaica. All ports at Martinique. All ports at Guadeloupe, St. Jago di Cuba. All ports in East India, Tonkin, and Cochin China. Trieste. All ports in Egypt. Ports on the Red Sea. Rio de Janeiro and Havana. Prohibition against the importation of used linen, wearing apparel, and used bed-clothes, if such do not belong to passengers' traveling effects, rags, used wadding, carding-wool, paper-shavings, hair, and hides, from the following places: Ports on the French coast between Nantes and St. Malo, both included. Ports on the Swedish coast between Malmo and Landskrona. Ports at the Adriatic coast between Ortona and Bari, both included. All ports in Florida. All ports at Jamaica. All ports at Martinique. All ports at Guadeloupe, St. Jago di Cuba. All ports in East India, Tonkin, and Cochin China, and all ports in Chili. The prohibition of importation into the country of used linen, wearing apparel, and used bed-clothes, if such do not belong to persons' traveling effects, is in force with regard to Rio de Janeiro and Havana. Besides, it is particularly ordered and under the control of the authorities that linen, wearing apparel, and bed-clothes which may be brought from the two before-mentioned places shall be cleansed. This order will be enforced at once. Published for the information and observance of all whom it may concern."

*Havana.*—The sanitary inspector reports for the month of April 474 deaths, including yellow fever, 24; small-pox, 55; enteric fever, 9; so-called pernicious fever, 6; diphtheria, 10; croup, 2.

The following telegram has also been received:

"HAVANA, May 9, 1888.

British steam-yacht 'Lancashire Witch' sailed 6th with several cases suspicious diarrhœa. Destination, Charleston or New York, probably."

The health officers at Charleston and New York were immediately notified by this Bureau.

## MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris.....	April 21.....	2,260,945	1,115	.....	.....	8	.....	10	5	35
Glasgow.....	April 21.....	545,678	228	.....	.....	.....	.....	4	1	8
Warsaw.....	April 14.....	439,174	194	.....	.....	2	.....	.....	2	4
Calcutta.....	March 24.....	433,219	242	70	.....	.....	.....	.....	.....	.....
Copenhagen.....	April 16.....	300,000	130	.....	.....	.....	.....	.....	5	7
Palermo.....	April 22.....	250,000	110	.....	.....	.....	1	2	1	5
Genoa.....	April 21.....	179,464	85	.....	.....	.....	2	.....	1	1
Leipsic.....	April 21.....	170,000	73	.....	.....	.....	.....	.....	1	5
Trieste.....	April 14.....	154,500	93	.....	.....	1	.....	.....	.....	.....
Toronto.....	April 28.....	130,000	41	.....	.....	.....	.....	1	.....	.....
Stuttgart.....	April 21.....	125,510	46	.....	.....	.....	.....	.....	.....	.....
Bremen.....	April 19.....	122,000	42	.....	.....	.....	.....	.....	1	.....
Havre.....	April 21.....	112,074	65	.....	.....	5	.....	2	.....	.....
Barmen.....	April 21.....	109,000	31	.....	.....	.....	.....	.....	.....	.....
Leghorn.....	April 22.....	101,718	42	.....	.....	.....	.....	.....	.....	.....
Cadiz.....	April 21.....	65,028	35	.....	.....	.....	.....	.....	.....	.....
Callao.....	April 14.....	34,000	.....	.....	.....	.....	.....	.....	.....	.....
Curacao.....	April 14.....	25,000	.....	.....	.....	.....	.....	.....	.....	.....
Sagua la Grande.....	April 14.....	15,605	8	.....	.....	1	.....	.....	.....	.....
Sagua la Grande.....	April 21.....	15,605	17	.....	.....	1	.....	1	.....	.....
Cartagena, Cola.....	April 14.....	13,000	10	.....	.....	.....	.....	.....	.....	.....
Matamoras.....	April 14.....	12,000	5	.....	.....	.....	.....	.....	.....	.....
Nassau.....	April 21.....	12,000	.....	.....	.....	.....	.....	.....	.....	.....
Laguayra.....	April 14.....	7,428	5	.....	.....	.....	.....	.....	.....	.....
Paita, Peru.....	April 14.....	4,000	.....	.....	.....	.....	.....	.....	.....	.....

*Key West.*—The medical officer in charge of the Marine-Hospital Service reported, under date of the 4th instant, that “the steamship ‘Alamo,’ from Galveston for New York, has just arrived with a case of small-pox in one of the crew. I understand the man has been isolated, and will be sent to the city hospital, and the vessel cleansed and allowed to proceed.”

By order of the Supervising Surgeon-General, Marine-Hospital Service :

GEO. W. STONER,  
Surgeon, Marine-Hospital Service.

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 20. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE.

Washington, D. C., May 18, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended May 18, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended April 28 corresponded to an annual rate of 18.9 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bolton and Hull, viz., 14.7, and the highest in Blackburn, viz., 25.9 a thousand. Small-pox caused 5 deaths in Sheffield, 1 in Bristol, and 1 in London.

During the quarter ended March 31, 150,014 deaths were registered, including whooping-cough, 4,428; measles, 2,129; scarlet fever, 1,868; diphtheria, 1,447; fever, 1,362; diarrhœa, 1,295; and small-pox, 583.

*London.*—One thousand four hundred and thirty-seven deaths were registered during the week, including measles, 16; scarlet fever, 15; diphtheria, 22; whooping-cough, 80; enteric fever, 7; diarrhœa and dysentery, 17. The deaths from all causes corresponded to an annual rate of 17.5 a thousand. Diseases of the respiratory organs caused 343 deaths; different forms of violence, 56; and 9 suicides were registered. In greater London 1,782 deaths were registered, corresponding to an annual rate of 16.8 a thousand of the population. In the "outer ring" 28 deaths from whooping-cough, and diphtheria, 9, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended April 28 in the 16 principal town districts of Ireland was 29.0 a thousand of the population. The lowest rate was recorded in Kilkenny, viz., 12.7, and the highest in Lisburn, viz., 48.3 a thousand. In Dublin 213 deaths were registered, including 5 from whooping-cough; scarlet fever, 7; typhus, 1; diphtheria, 1; enteric fever, 4; and measles, 3.



*Scotland.*—The deaths registered in 8 principal towns during the week ended April 28 corresponded to an annual rate of 21.0 a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 14.9, and the highest in Paisley, viz., 32.0 a thousand. The aggregate number of deaths registered from all causes was 530, including 8 from measles; scarlet fever, 4; diphtheria, 5; whooping-cough, 17; fever, 3; and diarrhoea, 12.

*Netherlands.*—The deaths registered in the 12 principal cities of the Netherlands, having an aggregate population of 1,101,568, during the year 1887 corresponded to an annual rate of 23 a thousand. The lowest mortality was recorded in Haarlem, viz., 21.1, and the highest in Maastricht, viz., 27.1 a thousand.

*Calcutta.*—One thousand and twenty deaths were registered during the month of February, 1888, including 182 from cholera.

*St. Thomas, W. I.*—Four hundred and sixty-two deaths were registered during the year 1887, including intermittent and remittent fever, 79; small-pox, 1; and leprosy, 3.

*Cearra, Brazil.*—Two hundred deaths were registered during the month of March, including 5 from yellow fever.

*Valparaiso, Chili.*—The United States consul, in his dispatch dated March 17, 1888, relative to cholera, states that "until last year the disease was unknown here in its epidemic form, when, in spite of guards and military pickets in the mountains, it crossed from the east to Santiago, invading many smaller communities and causing numerous deaths by its virulent character. It was, no doubt, the more deadly for the want of knowledge for its successful diagnosis and treatment, and for the absence of properly organized ambulance and hospital service. These were partially remedied by private subscriptions and exertions, with some governmental aid, and the then intendente of this province acted with energy and resolution. Disinfectants were freely employed, the sale of fruit was prohibited, and, after various fluctuations in the progress of the disease, which had broken out severely in this port, it disappeared from this part of the country with the setting in of the winter season. After a few months, however, it reappeared about Concepcion and Talcahuano, some two or three hundred miles down the coast, and with the coming on of summer it broke out violently near Santiago, in that city, and in Valparaiso, and has spread in all directions. In the mean time all the obvious precautions had here practically discontinued or disregarded by the authorities and the people. The lazarettos were closed, the ambulance service abandoned, and while the sale of fruit was forbidden, the prohibition against such



sale has been revoked. It is everywhere asserted, and, so far as I know, everywhere freely admitted, that both last year and this the general government and the local authorities have studiously concealed or misrepresented the extent of the mortality. The population of this city is probably about 110,000. An eminent physician, educated as such in the United States, recently stated to me that his examination of the official records of deaths from cholera in Valparaiso from 15th December, 1887, to 15th February, 1888, showed 1,194 deaths, while, as is well known, many deaths from that disease are ascribed to 'indigestion,' &c. This reprehensible state of things is owing partly to the indulgent and surprising regulation which authorizes the issuance of a burial permit on the bare statement of two persons who knew the deceased and declared their opinion as to the cause of his death. The same physician told me that in the period referred to—two months—thirty of his private patients had died of cholera. He estimates, deducing his estimates from various sources, that the mortality in this city alone for that time reaches 3,000, and for the whole country he places it at 60,000. Another physician of standing, whose practice from his official position is in a part of the city inhabited mostly by the poorer and more ignorant classes, places the cholera mortality during the same period at from 4,000 to 5,000. I consider it my duty to refer in this report to the fact that the certificates of health from the office of the captain of the port are altogether untrustworthy. The American steamer 'City of Pueblo,' which sailed on 1st December last from Valparaiso for San Francisco, had, as I was informed (being requested by the consignees to add my certificate, which, of course, I refused to do), a full certificate of the existence here of no epidemic disease, this long after cholera had reappeared; and the American schooner 'Oscar and Hattie,' of Marblehead, sailed from Valparaiso for Seattle, Wash., on 10th instant, with a certificate concluding—

"I certify, also, that the sanitary condition of this port is good, and that there are no cases of epidemic sick (persons.)"

*Trujillo, Venezuela.*—The United States consul at Maracaibo, in his dispatch dated April 27, 1888, states that "for several months past the section Trujillo, of the State of Los Andes, a mountainous region lying to the southward of Lake Maracaibo, has suffered severely from yellow fever, and recently the disease has made such progress as to almost decimate the population and cause the virtual abandonment of various thriving towns, among them notably the city of Trujillo, capital of the section of the same name, and one of the most important centers of the State.

"A curious and apparently anomalous fact in connection with this epidemic is that Maracaibo, together with the coast generally, has never been more free from this disease, while the localities which have heretofore been looked upon as our sanitaria are undergoing terrible suffering, although they have an elevation of from three to five thousand feet above the sea-level. Such a complete reversal of sanitary conditions has never heretofore been known in this district, and it is worthy of note that Maracaibo, which has a bad though undeserved reputation, is, although situated but thirty feet above the level of the sea, sending assistance to the mountain regions, which are suffering from a usual coast disease, from which at present we are totally exempt."

*Genoa, Italy.*—Seven cases of small-pox are reported for the week ended April 28, 1888.

*Santiago de Cuba.*—The sanitary inspector reports for the week ended May 5 that there are no cases of yellow fever at present in the military hospital, and the town is unusually healthy just now.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris.....	April 28.....	2,200,945	1,002			9		15	2	48
Calcutta.....	March 31.....	433,219	235	65						
Amsterdam.....	April 28.....	389,916	182							3
Rome.....	March 17.....	382,973	170			1		3		4
Rome.....	March 24.....	382,973	157			2		1		4
Copenhagen.....	April 17.....	300,000	158					1	4	8
Munich.....	April 21.....	275,000	139					2		3
Edinburgh.....	April 21.....	262,733	101					2		1
Palermo.....	April 28.....	250,000	88						2	5
Leipsic.....	April 28.....	170,000	55							5
Toronto.....	May 5.....	130,000	83					1		4
Stuttgart.....	April 28.....	125,510	42							
Bremen.....	April 21.....	122,000	52							
Havre.....	April 28.....	112,074	73			2		3		
Leghorn.....	April 29.....	101,718	38							
Rheims.....	April 28.....	97,903	64			1				2
Cadiz.....	April 28.....	65,028	40							
Merida.....	April 30.....	48,800	39							
Cienfuegos.....	April 23.....	40,573	18			2				
Cienfuegos.....	April 30.....	40,573	24			11		1		
Maracaibo.....	April 28.....	40,000	13					1		
Curacao.....	April 28.....	25,000	3							
Gibraltar.....	April 22.....	23,631	8					1		
Sagua la Grande.....	April 28.....	15,605	7			1				
St. Thomas.....	April 27.....	15,000	6							
Matamoras.....	April 28.....	12,000	13							
Laguayra.....	April 28.....	7,428	7							

## UNITED STATES.

*Apalachicola, Fla.*—The board of health have issued a quarantine proclamation containing twenty-seven sections. Section 2 requires

that "all boats and vessels arriving at the port of Apalachicola on and after May 10, 1888, either foreign or domestic, upon which any contagious, infectious, or pestilential diseases have occurred or existed during the voyage to said city, or within thirty days next preceding the arrival of said boats or vessels at said port or city of Apalachicola, are forbidden to approach the city nearer than is specified in the rules and regulations of the board of health; \* \* \* and are also forbidden to land any person or persons or goods until such boats or vessels have performed all quarantine, as directed by law and the rules and regulations of the board of health."

*San Francisco, Cal.—Small-pox.*—The secretary of the health department reports 22 cases and 4 deaths for the month of April. The Governor of Hong-Kong telegraphed to the mayor, "small-pox no longer epidemic in Hong-Kong." \* \* \* The Board of Health of San Francisco, at a meeting held May 4, declined to declare Hong-Kong a non-infected port, and will still exercise the utmost precaution in landing Chinese and their baggage.

*Portland, Me., May 10, 1888.*—Since last report one case of varioloid, of a mild type, has been under municipal quarantine, and is now convalescent.

By order of the Supervising Surgeon-General :

GEO. W. STONER,  
*Surgeon, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 21. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., May 25, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended May 25, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended May 5 corresponded to an annual rate of 18.7 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 15.1, and the highest in Salford, viz., 28.1 a thousand. Small-pox caused 8 deaths in Sheffield, 2 in Bristol, 1 in Oldham, and 1 in Hull.

*London.*—One thousand four hundred and twenty-nine deaths were registered during the week, including measles, 14; scarlet fever, 23; diphtheria, 15; whooping-cough, 87; typhus, 1; enteric fever, 11; diarrhoea and dysentery, 19. The deaths from all causes corresponded to an annual rate of 17.4 a thousand. Diseases of the respiratory organs caused 287 deaths; different forms of violence, 39; and 4 suicides were registered. In greater London 1,812 deaths were registered, corresponding to an annual rate of 17.1 a thousand of the population. In the "outer ring" 24 deaths from whooping-cough and 5 from fever were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended May 5 in the 16 principal town districts of Ireland was 25.1 a thousand of the population. The lowest rate was recorded in Lisburn, viz., 14.5, and the highest in Drogheda and Kilkenny, viz., 38.1 a thousand. In Dublin 147 deaths were registered, including 7 from whooping-cough; enteric fever, 2; measles, 1; diarrhoea, 1; and dysentery, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week ended May 5 corresponded to an annual rate of 19.5 a thousand of the population, which is estimated at 1,299,000. The lowest mortality

was recorded in Perth, viz., 14.4, and the highest in Glasgow, viz., 22.0 a thousand. The aggregate number of deaths registered from all causes was 493, including 6 from measles; scarlet fever, 3; diphtheria, 9; whooping-cough, 11; fever, 3; and diarrhoea, 3.

*Bordeaux.*—Five hundred and four deaths were registered during the month of April, 1888, including typhoid fever, 9; and diphtheria and croup, 16.

*Havana.*—The sanitary inspector reports 7 deaths from yellow fever and 8 from small-pox during the week ended May 12, 1888.

*Hobart.*—Sixty-six deaths were registered during the month of February, 1888, including 9 from enteric fever.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris.....	May 5.....	2,260,945	1,010	.....	.....	5	.....	13	4	48
Glasgow.....	May 5.....	545,678	223	.....	.....	.....	.....	.....	1	8
Warsaw.....	April 21.....	444,814	233	.....	.....	5	.....	.....	1	4
Warsaw.....	April 28.....	444,814	233	.....	.....	3	.....	.....	.....	7
Calcutta.....	April 7.....	433,219	252	68	.....	.....	.....	.....	.....	.....
Amsterdam.....	May 5.....	389,916	178	.....	.....	.....	.....	.....	.....	5
Rome.....	March 31.....	382,973	202	.....	.....	4	3	2	1	.....
Copenhagen.....	April 24.....	300,000	141	.....	.....	.....	.....	.....	2	6
Copenhagen.....	May 1.....	300,000	116	.....	.....	.....	.....	.....	2	8
Munich.....	April 28.....	275,000	143	.....	.....	.....	.....	.....	6	5
Palermo.....	May 5.....	250,000	108	.....	.....	.....	.....	.....	4	3
Belfast.....	April 28.....	227,022	124	.....	.....	.....	.....	.....	1	.....
Havana.....	May 5.....	208,000	112	.....	6	7	.....	1	.....	.....
Genoa.....	May 5.....	179,505	96	.....	.....	.....	1	.....	.....	.....
Leipsic.....	May 5.....	170,000	68	.....	.....	.....	.....	.....	1	1
Trieste.....	April 21.....	154,500	94	.....	.....	.....	.....	.....	.....	.....
Trieste.....	April 28.....	154,500	89	.....	.....	1	.....	.....	.....	1
Stuttgart.....	May 5.....	125,510	43	.....	.....	.....	.....	.....	.....	.....
Bremen.....	April 28.....	122,000	50	.....	.....	.....	.....	.....	.....	.....
Havre.....	May 5.....	112,074	75	.....	.....	5	2	.....	.....	.....
Barmen.....	April 28.....	109,000	44	.....	.....	.....	.....	.....	.....	.....
Leghorn.....	May 6.....	101,718	32	.....	.....	.....	.....	.....	.....	1
Mayence.....	April 28.....	65,802	31	.....	.....	.....	.....	.....	.....	1
Cienfuegos.....	May 7.....	40,753	17	.....	1	4	.....	.....	.....	.....
Vera Cruz.....	May 10.....	23,800	18	.....	.....	.....	.....	.....	.....	.....
Gibraltar.....	April 29.....	23,631	9	.....	.....	.....	.....	.....	.....	.....
Antigua.....	April 29.....	15,847	6	.....	.....	.....	.....	.....	.....	.....
Cape Haytien.....	May 6.....	15,000	5	.....	.....	.....	.....	.....	.....	.....
Cartagena, Cola.....	April 21.....	13,000	11	.....	.....	.....	.....	.....	.....	.....
Cartagena, Cola.....	April 30.....	13,000	12	.....	.....	.....	.....	.....	.....	.....
Matamoros.....	May 5.....	12,000	9	.....	.....	.....	.....	.....	.....	.....
Turk's Island.....	April 25.....	5,000	3	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

Dr. Cyril Williams, secretary of the health department, San Francisco, Cal., writes as follows:

SAN FRANCISCO, CAL., May 9, 1888.

I inclose copy of a letter to the health department, New York, March 20; also a paragraph from one of to-day's San Francisco papers. The



health-officer desires to call your attention to the speedy manner in which infected passengers are sent west from the Atlantic ports.

(Extract from newspaper inclosed.)

The steamship "Main," from Bremen, which had been detained at quarantine for two days on account of a case of small-pox being discovered on board, reached pier 8, Locust Point, Baltimore, yesterday. Her 1,147 emigrants were discharged and sent west by the Baltimore and Ohio Railroad.—"*Dispatch*." That is the way they do it in the east. On this coast she would have been kept in quarantine about a month.

(Inclosure.)

SAN FRANCISCO, CAL., *March 20, 1888.*

DEAR SIR: Yesterday Anton Anderson, aged 21, a native of Norway, was sent to the small-pox hospital. He stated that he came from Glasgow by the steamship "Circassian." Immediately on landing at New York he left for this place, arriving here on the 17th instant by the Southern Pacific Railroad. According to his account he was taken sick on the 11th, the eruption appearing on the 14th. It is a bad case of confluent small-pox.

The HEALTH-OFFICER, NEW YORK.

*Key West, Fla.*—The medical officer in charge of the Marine-Hospital Service reports, under date of May 17, that "the master of a sponging-schooner came ashore last night and was found this morning to be suffering with small-pox. The vessel had been absent from here for twelve days. The case has been sent to the pest-house. The crew were collected, put on board, and sent in vessel to the local quarantine."

*Memphis, Tenn.*—The medical officer in charge of the Marine-Hospital Service reported by telegraph, under date of 23d instant, "two cases of small-pox reported in city."

The following letter has been received from Dr. C. P. Wilkinson, president of the board of health of the State of Louisiana:

NEW ORLEANS, *May 17, 1888.*

I have reliable information that baggage from Havana is transferred from steamer to railroad at Port Tampa without any disinfection whatever, and is distributed to various points in the United States.

Upon receipt of the letter, the following telegram was sent to Dr. J. P. Wall, president of the board of health of Tampa, Fla.:

WASHINGTON, D. C., *May 19, 1888.*

New Orleans board of health states that baggage from Havana is transferred from steamer to railroad without disinfection. Is this correct?

To which a reply was received as follows:

TAMPA, FLA., *May 21, 1888.*

Disinfection on steamer in hold. Having disinfecting apparatus fitted up at Port Tampa. This is the new wharf of Plant Steamship Line, nine

miles from town. New Orleans need not fear anything from here. Will write you. Plant City has been thoroughly cleaned up and disinfected, and free of sickness.

J. P. WALL,  
*President Board of Health.*

*Pittsburgh, Pa.*—Information has been received from unofficial sources that three cases of glanders have appeared at Pittsburgh.

JOHN B. HAMILTON,  
*Supervising Surgeon-General, Marine-Hospital Service.*

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
              { No. 22. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., June 1, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended June 1, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended May 12 corresponded to an annual rate of 17.6 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Cardiff, viz., 12.5, and the highest in Bolton, viz., 26.7 a thousand. Small-pox caused 3 deaths in Sheffield, 1 in Manchester, 1 in Preston, and 1 in Leeds.

*London.*—One thousand three hundred and sixty deaths were registered during the week, including measles, 22; scarlet fever, 19; diphtheria, 15; whooping-cough, 52; enteric fever, 9; diarrhoea and dysentery, 14. The deaths from all causes corresponded to an annual rate of 16.6 a thousand. Diseases of the respiratory organs caused 260 deaths; different forms of violence, 51; and 12 suicides were registered. In greater London 1,710 deaths were registered, corresponding to an annual rate of 16.1 a thousand of the population. In the "outer ring" 16 deaths from whooping-cough were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended May 12 in the 16 principal town districts of Ireland was 22.9 a thousand of the population. The lowest rate was recorded in Dundalk, viz., 0.0, and the highest in Lisburn, viz., 38.7 a thousand. In Dublin 156 deaths were registered, including 9 from whooping-cough; enteric fever, 1; measles, 1; scarlet fever, 4; typhus, 1; and dysentery, 1.

During the quarter ended March 31, 1888, there were 27,252 deaths registered, corresponding to an annual rate of 22.8 a thousand, includ-

ing small-pox, 3; measles, 805; scarlatina, 257; typhus fever, 105; whooping-cough, 421; diphtheria, 138; simple continued fever and ill-defined forms of fever, 96; enteric fever, 154; diarrhoea, 290; simple cholera, 3; hydrophobia, 5.

*Scotland.*—The deaths registered in 8 principal towns during the week ended May 12 corresponded to an annual rate of 21.1 a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 14.7, and the highest in Glasgow, viz., 24.3 a thousand. The aggregate number of deaths registered from all causes was 534, including 11 from measles; scarlet fever, 3; diphtheria, 1; whooping-cough, 19; fever, 3; and diarrhoea, 3.

Two thousand eight hundred and twenty-four deaths were registered during the quarter ended March 31, 1888; corresponding to an annual death rate of 20.8 a thousand.

*Honolulu, Hawaiian Islands.*—The United States consul, in his dispatch dated April 28, 1888, relative to the interest that is now manifested throughout the world in the disease of leprosy, and the controversy as to its contagious character, states that "in the case of Keame, who was condemned to death for murder, but had his sentence commuted to imprisonment for life upon his agreement to allow himself to be inoculated with leprosy, that the disease has finally made its appearance after a period of two and one-half years since the inoculation, which has resulted in a general infection of his system with leprosy virus. A very remote chance of his having previously had germs of the disease in his system may exist. This, in the opinion of Dr. Arthur Mowritz, physician in charge of the leper island where the unfortunates are segregated, is possible, but not probable, although Hawaii has been an endemic leprosy focus for the past century."

*Buenos Ayres.*—Nine hundred and seventy-seven deaths were registered during the month of February, 1888, including small-pox, 70; enteric fever, 39; scarlet fever, 3; and diphtheria, 51.

*Palermo, Italy.*—The United States consul, in his dispatch dated May 9, 1888, relative to his reports on cholera of last year, states: "I am of opinion that the disease has again manifested itself in this city. This opinion is based on the large number of deaths in proportion to the total thereof, which occurred in this city during the last week from 'intestinal catarrh,' a term almost synonymous with cholera in Palermo, in view of the initial cases of that disease being thus designated by the authorities (in order to prevent a panic) in recent epi-

demics, as well as upon the fact that the messenger to the consulate was attacked last night by so-called intestinal catarrh, and is now confined to his bed."

*Rome, Italy.*—The United States consul-general, in his dispatch dated May 4, 1888, states that "there exists a great deal of misapprehension in regard to the health of Rome as compared with other cities. By many persons Rome is supposed to be almost uninhabitable in summer, and they believe that a very dangerous disease, known as 'Roman fever,' prevails in Rome at all times of the year. No such disease is known to medical men in Rome, or is mentioned in any medical work. There is a certain amount of malarial and typhoid fever in Rome, but the so-called Roman fever is purely imaginary. Undoubtedly Rome has greatly improved in regard to its sanitary conditions since the establishment of the present government. The whole drainage system, which in former days was very bad, has been remodeled, and the city is now thoroughly drained. Large tracts of vacant land within the walls have been closely built over, and malaria, which formerly existed in those tracts, has since disappeared. The closing of all the wells in the city has done much to decrease zymotic diseases, and the enforcement of wise sanitary regulations has greatly lessened the death rate. Outside of Rome, in the Campagna, the malaria in summer and autumn is very dangerous. While it does not extend within the walls, it produces a great deal of illness among the peasants, especially during the harvest season, when troops of men and women come down from the mountains and live night and day in the Campagna until the harvest is over. When these people fall ill of malarial fever they are brought to the Roman hospitals, and in case of death they contribute to swell the death rate of the city. \* \* \* The large increase of the death rate in the month of September, 1887, was not normal, but was due to the presence in Rome of the cholera at that time. There were some 200 to 250 deaths of cholera here in the late summer and early autumn of 1887."

*Havana.*—The sanitary inspector reports 3 deaths from yellow fever and 7 from small-pox during the week ended May 19, 1888.

SANTIAGO DE CUBA, *May 19, 1888.*

No yellow fever has appeared this week at the military hospital. The town is also free from it.

*Marseilles.*—Nine hundred and twenty-one deaths were registered during the month of April, 1888, including small-pox, 10; enteric fever, 20; scarlet fever, 6; diphtheria and croup, 43; and measles, 54.



MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris.....	May 12.....	2,260,945	1,027			6		10	4	50
Glasgow.....	May 12.....	545,678	246						1	1
Warsaw.....	May 5.....	444,814	210			5			1	6
Calcutta.....	April 14.....	433,219	232	59						2
Amsterdam.....	May 12.....	389,916	166							
Copenhagen.....	May 8.....	300,000	105						1	3
Edinburgh.....	May 5.....	262,733	106							1
Edinburgh.....	May 12.....	262,733	107					1		
Palermo.....	May 12.....	250,000	77						1	
Belfast.....	May 5.....	227,022	126					1	1	1
Belfast.....	May 12.....	227,022	109					2	1	2
Genoa.....	May 12.....	179,513	89			4	1			
Leipsic.....	May 12.....	170,000	70						1	1
Trieste.....	May 5.....	154,500	95			2				1
Stuttgart.....	May 12.....	125,510	40							1
Bremen.....	May 5.....	122,000	55						1	
Havre.....	May 12.....	112,074	65			6		1		
Pernambuco.....	April 14.....	110,000	79		1					
Barmen.....	May 5.....	109,000	38				1			
Barmen.....	May 12.....	109,000	45							
Rheims.....	May 12.....	97,093	72							2
Mayence.....	May 5.....	65,802	37							
Cadiz.....	May 5.....	65,028	49							
Cadiz.....	May 12.....	65,028	38							
Merida, Yucatan.....	May 6.....	48,800	47					3		
Merida, Yucatan.....	May 13.....	48,800						1		
Cienfuegos.....	May 14.....	40,753	11			1				
Curacao.....	May 12.....	25,000	5							
Vera Cruz.....	May 17.....	23,800	21							
Gibraltar.....	May 6.....	23,630	6							
Sagua la Grande.....	May 5.....	15,605	7			1				
Sagua la Grande.....	May 12.....	15,605	7							
Matamoras.....	May 12.....	12,000	14							
Matamoras.....	May 19.....	12,000	11							
Laguayra.....	May 5.....	7,428	6							
Laguayra.....	May 12.....	7,428	12							

## UNITED STATES.

The following letter has been received from Dr. J. P. Wall, president of the board of health, Tampa, Fla., under date of the 23d instant :

The Plant steamers from Havana landed at Port Tampa for the first time on the 13th instant. \* \* \* The disinfection is done on board of steamer for the present, as in previous years. I am, however, having a fumigation-chamber and other disinfecting apparatus fixed up on the wharf at Port Tampa, which is about one mile from shore. The incomplete condition of the wharf prevented my having this done earlier, before the steamer began to make that the place of transfer. I think that before the 1st proximo everything will be in working order. As you know, it is the company's policy to prevent the steamers from becoming infected, and, although every pains will be taken here as to the disinfection of baggage, the rules and regulations of the company as to not allowing unacclimated persons to take passage will be still enforced as in the two previous years. I went out to Plant City yesterday, in company with Dr. Jerome Coch-



ran, of Alabama. The place is healthy, and there had not been any case of fever there since week before last. I had the place thoroughly disinfected, burning all beds and mattresses in houses where sickness had been, and otherwise disinfecting houses and premises. I think the fever has been stamped out, though we will not allow people to return there before week after next, keeping up a vigilant observation and resorting to aeration as much as possible in the mean time.

Additional rules and regulations for Tampa Bay and the Gulf coast of Hillsborough County have been adopted and promulgated by the Board of Health of Hillsborough County, locating the quarantine grounds in Old Tampa Bay. The following is an extract from said rules and regulations:

Rule 2. A yellow flag will be displayed at or near the station, where all boats and vessels, except those of regular established lines making regular periodic trips, will stop until visited by the quarantine physician or inspector, and the sanitary condition of the vessel and the health of the crew and passengers, as well as that of the city and port from which the vessel hails, are fully inquired into, when, if everything in connection with the vessel and hailing port is found satisfactory, *pratique* shall be granted, and the vessel can proceed to Port Tampa or other place within the county to land passengers and discharge cargo. Otherwise, the vessel shall be ordered into quarantine, subject to the further orders or disposition of the board of health—either to be ordered to the nearest United States quarantine station or to be subjected to such detention and processes of disinfection as the board of health may order and direct, under the supervision of the quarantine physician.

\* \* \* \* \*

Rule 4. All vessels or boats arriving in the waters of Hillsborough County from the high seas shall, if ordered into quarantine, proceed to the quarantine station near Port Tampa, in Old Tampa Bay; and all vessels or boats from any port or city, foreign or domestic, where infectious or contagious diseases are prevailing, shall be ordered into quarantine and undergo inspection before being allowed to land passengers and freight or hold any communication with the shore.

Rule 5. The quarantine rules and regulations adopted by the board of health for the port of the City of Tampa are hereby declared to be in full force and effect, so far as applicable, to all vessels from the high sea arriving in the waters of Hillsborough County.

Rule 6. The board of health shall appoint a quarantine physician and a quarantine inspector, the latter to remain permanently at the quarantine station during the season of quarantine, and pay such physician and inspector such salaries, respectively, as may be mutually agreed upon. The inspector shall be under the control and orders of the physician.

*Memphis, Tenn.*—The two cases of small-pox reported in the last abstract, passed through the first week of the disease before they were discovered by the health officer, and isolated in the pest-house; but no new cases have since been reported.

JOHN B. HAMILTON,  
*Supervising Surgeon-General, Marine-Hospital Service.*

...the water of Hillsborough  
...into granular, pressed  
...in Old Tampa Bay; and  
...on domestic waste  
...shall be ordered into  
...allowed to land  
...the shore.

...the Board of Directors of the company.

...and a continuing physician...  
...permanently at the...  
...and pay such physi-  
...as may be necessary  
...control and orders of

... reported in the last ap-  
... the distance before they were  
... in the post-horse, but no

WILLIAM HAMILTON,  
M.D., Medical Director.

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 23. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., June 8, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended June 8, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended May 19 corresponded to an annual rate of 18.9 a thousand of the aggregate population, which is estimated at 9,398,273. •The lowest rate was recorded in Leicester, viz., 15.3, and the highest in Blackburn, viz., 25.4 a thousand. Small-pox caused 8 deaths in Sheffield and 1 in Bristol.

*London.*—One thousand four hundred and sixty-nine deaths were registered during the week, including measles, 18; scarlet fever, 13; diphtheria, 29; whooping-cough, 64; enteric fever, 12; diarrhoea and dysentery, 15. The deaths from all causes corresponded to an annual rate of 17.9 a thousand. Diseases of the respiratory organs caused 296 deaths; different forms of violence, 63; and 13 suicides were registered. In greater London 1,779 deaths were registered, corresponding to an annual rate of 16.8 a thousand of the population. In the "outer ring" 23 deaths from whooping-cough and 5 from diphtheria were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended May 19 in the 16 principal town districts of Ireland was 22.8 a thousand of the population. The lowest rate was recorded in Newry, viz., 7.0, and the highest in Lurgan, viz., 46.2 a thousand. In Dublin 160 deaths were registered, including 7 from whooping-cough; enteric fever, 6; scarlet fever, 1; and diarrhoea, 4.

*Scotland.*—The deaths registered in 8 principal towns during the week ended May 19 corresponded to an annual rate of 19.3 a thousand of the population, which is estimated at 1,299,000. The lowest mortality



## UNITED STATES.

The Secretary of the Treasury has issued the following circular, under date of June 4, 1888:

In order to assist local authorities in the maintenance of quarantine against the introduction of infectious diseases, as provided in section 4792, Revised Statutes, the act of April 29, 1878, and appropriation acts authorizing the President to maintain quarantine at points of danger, the President has determined to establish, by means of the vessels of the Revenue Marine, a national patrol of the coast of the United States, so far as it may be practicable under existing law and consistent with the performance of the other duties confided to that Service.

You are accordingly directed to cruise, actively, with the revenue steamer —, under your command, upon the outer lines of your cruising-grounds, and to exercise special vigilance in speaking all vessels arriving from foreign ports, or from infected ports of the United States, directing your inquiries, first, as to the port from which the vessel sailed, and, secondly, as to the health of those on board at the time of departure, during passage, and at the time of hailing; and should the information gained indicate a condition of contagion or infection in the vessel or crew, or that the vessel has left a port at which contagious or infectious diseases were prevailing, her master will be directed to proceed for examination to the outer quarantine station provided for her port of destination.

The following regulations will be observed relative to the inspection of vessels:

If a vessel be found with sickness on board, or in a foul condition, she will be directed to proceed to the quarantine station hereinbefore indicated, and the Revenue-Marine officer will immediately notify the proper quarantine officer. In such case no person will be permitted to board the vessel until the medical officers in charge of the quarantine shall have given the usual permit.

Should the pilot or master of a vessel, when hailed, report cases of recent or present sickness on board, the revenue officer will not board, but will send her immediately to quarantine.

Quarantine officers will be recognized as follows, viz:

Medical officers or acting assistant surgeons of the Marine-Hospital Service in charge of Gulf, South Atlantic, Cape Charles, or Delaware Breakwater Quarantines, or any officer of said Service on duty at any port on the interior rivers, the Great Lakes, or Pacific coast, and all quarantine officers acting under proper State or local authority.

Special regulations to aid local quarantine authorities will be promulgated hereafter should occasion require.

Dr. Jerome Cochran, of the State Board of Health of Alabama, in a recent report has stated that the late epidemic of yellow fever in Florida was not introduced into the State by the usual trade channels, but by smugglers. This confirms unofficial statements received at this Bureau some weeks since. Dr. Cochran states that the last case was discharged May 11, and the last death occurred May 8, and that there have been active precautions taken to prevent the reappearance of the disease.

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*



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## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 24. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., June 15, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended June 15, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended May 26 corresponded to an annual rate of 17.8 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 10.9, and the highest in Preston, viz., 27.8 a thousand. Small-pox caused 3 deaths in Sheffield, 1 in Bristol, 2 in Preston, 1 in Oldham, and 1 in Hull.

*London.*—One thousand three hundred and sixty-one deaths were registered during the week, including measles, 23; scarlet fever, 17; diphtheria, 19; whooping-cough, 64; enteric fever, 10; diarrhœa and dysentery, 9; and choleraic diarrhœa, 2. The deaths from all causes corresponded to an annual rate of 16.6 a thousand. Diseases of the respiratory organs caused 228 deaths; different forms of violence, 65; and 9 suicides were registered. In greater London 1,689 deaths were registered, corresponding to an annual rate of 15.9 a thousand of the population. In the "outer ring" 19 deaths from whooping-cough were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended May 26 in the 16 principal town districts of Ireland was 23.3 a thousand of the population. The lowest rate was recorded in Galway, viz., 3.4, and the highest in Drogheda, viz., 42.3 a thousand. In Dublin 165 deaths were registered, including measles, 2; whooping-cough, 7; enteric fever, 1; scarlet fever, 5; and diarrhœa, 2.

*Scotland.*—The deaths registered in 8 principal towns during the week ended May 26 corresponded to an annual rate of 20.9 a thousand of the population, which is estimated at 1,299,000. The lowest mortality

was recorded in Leith, viz., 11.2, and the highest in Perth, viz., 25.6 a thousand. The aggregate number of deaths registered from all causes was 529, including measles, 13; scarlet fever, 10; diphtheria, 1; whooping-cough, 11; fever, 6, and diarrhoea, 10.

*Tokio, Japan.*—The United States minister, in his dispatch dated May 9, 1888, transmitted copies of a printed pamphlet entitled "A Brief Review of the Operations of the Home Department in Connection with the Cholera Epidemic of the 19th year of the Meiji (1886)." The following is an extract from the introduction to the pamphlet:

The cholera epidemic of the 19th year of Meiji (1886) was the most violent and malignant since that of the 12th year of Meiji (1879), there being 155,574 cases, among which 110,086 were fatal. Indeed, there were only 17 days in the whole year when there were no cases.

The epidemic spread over the whole country, an area of 3 fu 41 ken and even Hokkaido suffered from its invasion; but it was most violent in Osaka, Ishikawa, Toyama, Tokyo, Fukui, and Niigata. The kens of Kagoshima and Miyazaki and the northern part of Hokkaido, were the only localities which escaped its ravages.

As to the cause of its outbreak and propagation, accurate evidence is wanting; it is an undeniable fact, however, that it sprang and was propagated from the widely spread germs of the disease which had laid dormant in Osaka the preceding year, there being no trace of a fresh introduction. Osaka, in the autumn of the preceding year, had been invaded by the disease from Nagasaki; but after some thirty days of prevalence the epidemic gradually declined with the approach of the colder season, though it did not then entirely disappear. One or two cases kept occurring continually over into the next year, until on the 2d of January there were five cases reported in the western and southern districts of the city and in the ku of Sakai. On the 3d, five more cases were reported in the three ku of the West, South, and North, and the ku of Sakai. From this time forward, the number of cases gradually increased until the approach of the warmer season, toward the end of April, when it had spread all over the city, where it raged up to the end of October. During the epidemic, there were ninety-nine days in which the daily number of cases reported was over one hundred, and four days when there were two hundred. Indeed, it was the most severe epidemic ever known in Osaka.

The situation of Osaka is such that it undoubtedly favors the propagation of an epidemic; for the water of the Yodo River being conducted through the city by canals in various directions, besides furnishing a convenient roadway for transportation and water traffic, also receives the contents of the drains of the city, while at the same time it supplies the city with drinking-water.

The wells, keeping the same level with the canals, freely communicate with each other, and thus the drinking-water of the city is more or less mingled with the water of the drains. Such, then, being the situation of Osaka, when an epidemic appears the same convenience for the transportation of goods furnishes an easy medium for the propagation of disease. It is not strange, then, that since the tenth year of Meiji (1877) whenever an epidemic prevails the city has been a center of the epidemic. Moreover, in the preceding year there was

much rain after the spring until finally, in June, the Yodo River overflowed its banks, inundating the streets and houses. Hence the city was rendered very filthy, in consequence of which the concealed germs found a favorable nidus from which the disease appeared with the return of the warm weather, and finally ravaged the whole city. It is also to be borne in mind that, as Osaka is the commercial center of Japan and has free communication in every direction, it is likely to become the cradle of epidemics, and, therefore, whatever has made its appearance in various other localities has had its origin directly or indirectly in Osaka.

*Callao*.—The United States consul, in his dispatch dated May 3, 1888, transmits a copy of a translation of a decree issued on the 2d instant by the government. The following is a copy of the translation:

*LIMA, May 1, 1888*.—Having examined the resolution adopted by the supreme board of health, the same is hereby approved and it is declared—

1. Vessels arriving from Atlantic, with clean bills of health and in voyage for Peru, will be received in all the sea-ports without undergoing quarantine, if they may not have touched in those ports of Chili where the cholera made its appearance.

2. These vessels (although) when they may have touched in ports where the epidemic has disappeared, shall be admitted after a quarantine of observation and disinfection, in the event that during the voyage no case of cholera may have occurred on board.

3. Vessels proceeding from Chilean ports which may have escaped the cholera, and which, before commencing their voyage, had not traded at infected ports, shall be received as those mentioned in the first article of this decree.

4. Vessels arriving from Chilean ports where the epidemic has disappeared, but where it existed for some period of time, will only be admitted to Peruvian ports if they have been disinfected before commencing their voyage, which must appear from a certificate of the medical man on board, and on arrival shall be subjected to a quarantine of at least five days, and be again disinfected before being placed in free pratique.

5. Passengers and European merchandise arriving from Arica and uninfected Chilean ports shall be received without detention.

6. Passengers and merchandise arriving from Chilean ports where only recently the cholera has disappeared, shall be received in Peruvian ports under the conditions stipulated in Article 4.

7. Vessels arriving from infected Chilean ports shall not be received at present in the Peruvian ports, and under this are comprehended the vessels proceeding from the district to the north of Valparaiso up the Antofagasta, excepting these two ports.

8. The terms for the reception of these ships shall be fixed by the board of health, according to Article 42, paragraph 8 of the regulations.

This ordinance goes into effect from the date hereof.

*Cearra, Brazil*.—One hundred and sixty-five deaths were registered during the month of April, including 11 from yellow fever.

*Catania, Italy*.—Two hundred and ninety-six deaths were registered during the month of March, including small-pox, 6, and enteric fever, 8.

*Havana.*—Four hundred and fifty-one deaths were registered during the month of May, including yellow fever, 27; enteric fever, 4; so-called pernicious fever, 14; small-pox, 29; diphtheria, 1; croup, 5, and measles, 1. Over 75 per cent. of the deaths from yellow fever occurred at the military hospital. The sanitary inspector states that “up to the present time yellow fever shows little or no tendency to spread, and the cases which occur are confined to old, well-known insanitary places, infected fortifications, and the immediate vicinity of wharves on the Havana side of the harbor. Small-pox continues to diminish in Havana and suburbs.”

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris.....	May 26.....	2,260,945	939	.....	.....	6	.....	11	4	38
Glasgow.....	May 26.....	545,678	257	.....	.....	.....	.....	3	9	.....
Warsaw.....	May 19.....	444,814	303	.....	.....	1	.....	.....	6	11
Calcutta.....	April 28.....	433,219	240	69	.....	.....	.....	.....	.....	.....
Amsterdam.....	May 26.....	389,916	142	.....	.....	.....	.....	.....	.....	2
Rome.....	April 7.....	388,300	166	.....	.....	.....	.....	1	2	.....
Rome.....	April 14.....	388,300	180	.....	.....	5	.....	3	.....	2
Copenhagen.....	May 22.....	300,000	168	.....	.....	.....	.....	1	1	2
Munich.....	May 19.....	275,000	183	.....	.....	.....	.....	1	1	6
Edinburgh.....	May 19.....	262,733	104	.....	.....	.....	.....	1	1	2
Palermo.....	May 26.....	250,000	.....	.....	.....	.....	.....	1	2	12
Genoa.....	May 26.....	179,504	107	.....	.....	.....	.....	.....	.....	.....
Leipsic.....	May 26.....	170,000	55	.....	.....	.....	.....	.....	2	3
Stuttgart.....	May 26.....	125,510	43	.....	.....	.....	.....	.....	.....	1
Toronto.....	June 2.....	130,000	40	.....	.....	.....	.....	.....	.....	.....
Bremen.....	May 24.....	122,000	60	.....	.....	.....	.....	.....	.....	.....
Havre.....	May 26.....	112,074	55	.....	.....	3	.....	2	1	.....
Pernambuco.....	May 8.....	110,000	114	.....	1	.....	.....	5	.....	.....
Pernambuco.....	May 15.....	110,000	66	.....	1	.....	2	4	.....	.....
Leghorn.....	May 27.....	101,718	45	.....	.....	.....	.....	.....	.....	.....
Mayence.....	May 19.....	65,802	52	.....	.....	.....	.....	.....	.....	.....
Merida.....	May 27.....	48,800	39	.....	.....	.....	.....	.....	.....	.....
Cienfuegos.....	May 28.....	40,753	21	.....	.....	11	.....	.....	.....	.....
Guayaquil.....	April 22.....	35,000	62	.....	4	4	.....	30	.....	.....
Guayaquil.....	April 29.....	35,000	52	.....	6	4	.....	21	.....	.....
Vera Cruz.....	May 31.....	23,800	18	.....	.....	.....	.....	.....	.....	.....
Gibraltar.....	May 20.....	23,631	11	.....	.....	.....	.....	.....	.....	.....
St. Thomas.....	May 18.....	15,000	4	.....	.....	.....	.....	.....	.....	.....
Cape Haytien.....	June 2.....	15,000	6	.....	.....	.....	.....	.....	.....	.....
Cartagena, Col'a.....	May 19.....	13,000	7	.....	.....	.....	.....	.....	.....	.....
Turk's Island.....	May 23.....	4,732	4	.....	.....	.....	.....	.....	.....	.....
Paite.....	May 12.....	4,000	.....	.....	.....	.....	.....	.....	.....	.....
Livingston.....	May 26.....	2,500	2	.....	.....	.....	.....	.....	.....	.....
San Juan del Norte.....	May 7.....	500	1	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

*San Francisco.*—Eight cases and 2 deaths from small-pox are reported for the month of May, 1888.

NOTICE.—After July 1, 1888, a mortality table of American cities will be inserted in the abstract. Registrars and health officers are respectfully requested to furnish weekly statements in exchange.

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 25. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., June 22, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended June 22, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended June 2 corresponded to an annual rate of 17.6 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Derby, viz., 13.0, and the highest in Wolverhampton, viz., 24.9 a thousand. Small-pox caused 4 deaths in Sheffield, 1 in Bristol, 1 in Preston, 1 in Oldham, 1 in Hull, 1 in Derby, and 1 in Nottingham.

*London.*—One thousand three hundred and twenty-three deaths were registered during the week, including measles, 24; scarlet fever, 19; diphtheria, 26; whooping-cough, 37; enteric fever, 9; diarrhoea and dysentery, 19; and choleraic diarrhoea, 1. The deaths from all causes corresponded to an annual rate of 16.1 a thousand. Diseases of the respiratory organs caused 237 deaths; different forms of violence, 73; and 11 suicides were registered. In greater London 1,607 deaths were registered, corresponding to an annual rate of 15.2 a thousand of the population. In the "outer ring" 7 deaths from whooping-cough and 9 from diphtheria were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended June 2 in the 16 principal town

districts of Ireland was 21.5 a thousand of the population. The lowest rate was recorded in Armagh, viz., 5.2, and the highest in Wexford, viz., 47.0 a thousand. In Dublin 159 deaths were registered, including measles, 1; whooping-cough, 9; enteric fever, 3; scarlet fever, 5; and diarrhoea, 2.

*Scotland.*—The deaths registered in 8 principal towns during the week ended June 2 corresponded to an annual rate of 19.3 a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 12.2, and the highest in Paisley, viz., 22.8 a thousand. The aggregate number of deaths registered from all causes was 489, including measles, 11; scarlet fever, 9; diphtheria, 4; whooping-cough, 14; fever, 7; and diarrhoea, 7.

*Calcutta.*—The report of vital statistics for the quarter ended March 31 shows that 541 deaths from cholera were registered during that period. "The water supply in the worst localities is of the scantiest. On the riparian districts the inhabitants have to resort to the river and to the polluted wells in their own houses. The occupants of large bustees have to resort to the nearest filthy tank. 'Give us water' is the almost universal cry of the inhabitants in the native quarters of the town. That cry has been kept up constantly, to my own knowledge, for nearly two years, without the slightest relief. In 1884, four years ago, during the unprecedented outbreak of cholera in Calcutta, the scarcity of water then formed a subject of complaint by some of the commissioners, but apparently without any effect."

*Christiania, Norway.*—The Norwegian Government, under date of May 24, issued an order that the following-named countries and ports, until further notice, will be considered cholera-infected:

China, Japan, Cochin China, East Indian Islands, East India, Syria, ports in the Red Sea, ports in Uruguay, and ports in Chili.

*Marseilles.*—Nine hundred and five deaths were registered during the month of May, 1888, including small-pox, 14; enteric fever, 33; scarlet fever, 3; diphtheria and croup, 50; and measles, 47.

*Buenos Ayres.*—One thousand and sixty-nine deaths were registered during the month of March, 1888, including small-pox, 78; enteric fever, 65; and diphtheria, 76.

*Montevideo.*—Three hundred and seventy-five deaths were registered during the month of March, 1888, including small-pox, 39; enteric and typhus fevers, 15.

*Havana.*—Eight deaths from yellow fever and 5 from small-pox were registered during the week ended June 16, 1888.

## MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—					
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.
Paris.....	June 2.....	2,260,945	955	.....	.....	6	.....	10	6
Glasgow.....	June 2.....	545,678	225	.....	.....	.....	.....	.....	6
Warsaw.....	May 26.....	444,814	176	.....	.....	4	.....	.....	2
Calcutta.....	May 5.....	433,219	216	61	.....	.....	.....	.....	.....
Amsterdam.....	June 2.....	389,916	158	.....	.....	.....	.....	.....	1
Rome.....	April 21.....	388,300	181	.....	.....	3	.....	1	6
Copenhagen.....	May 29.....	300,000	124	.....	.....	.....	.....	1	1
Munich.....	May 26.....	275,000	165	.....	.....	.....	.....	1	2
Palermo.....	June 2.....	250,000	82	.....	.....	.....	.....	1	3
Genoa.....	June 2.....	179,401	93	.....	.....	.....	1	.....	4
Leipsic.....	June 2.....	170,000	53	.....	.....	.....	.....	1	.....
Trieste.....	May 12.....	154,500	91	.....	.....	1	.....	.....	.....
Stuttgart.....	June 2.....	125,500	44	.....	.....	.....	.....	.....	2
Bremen.....	May 26.....	122,000	25	.....	.....	.....	.....	.....	.....
Havre.....	June 2.....	112,074	67	.....	.....	5	.....	1	1
Barmen.....	May 26.....	109,000	45	.....	.....	.....	.....	.....	.....
Leghorn.....	June 3.....	101,718	27	.....	.....	.....	.....	.....	.....
Cadiz.....	May 26.....	65,028	54	.....	.....	.....	.....	.....	.....
Cadiz.....	June 2.....	65,028	51	.....	.....	.....	.....	.....	.....
Curaçoa.....	June 2.....	25,000	5	.....	.....	.....	.....	.....	.....
Vera Cruz.....	June 7.....	23,800	19	.....	.....	.....	.....	.....	.....
Gibraltar.....	May 27.....	23,634	4	.....	.....	.....	.....	.....	.....
Sagua la Grande.....	May 26.....	15,605	8	.....	.....	1	.....	.....	1
Sagua la Grande.....	June 2.....	15,605	10	.....	.....	.....	.....	.....	.....
Bermuda.....	June 12.....	15,260	.....	.....	.....	.....	.....	.....	.....
Matamoras.....	May 26.....	12,000	5	.....	.....	.....	.....	.....	.....
Matamoras.....	June 2.....	12,000	10	.....	.....	.....	.....	.....	.....
Laguayra.....	May 26.....	7,428	6	.....	.....	.....	.....	.....	.....
Laguayra.....	June 2.....	7,428	5	.....	.....	.....	.....	.....	.....
Livingston.....	June 9.....	2,500	1	.....	.....	.....	.....	.....	.....
San Juan del Norte.....	May 21.....	500	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

*Washington, D. C.*—The following regulations, approved by the President and promulgated by the Secretary of State, has been issued to United States consular officers by the State Department. They are republished here for the information of United States quarantine officers and municipal health officers :

*The quarantine service.*

Section 2 of an act entitled "An act to prevent the introduction of contagious or infectious diseases into the United States," approved April 29, 1878, provides—

"That whenever any infectious or contagious disease shall appear in any foreign port or country, and whenever any vessel shall leave any infected foreign port, or, having on board goods or passengers coming from any place or district infected with cholera or yellow fever, shall leave any foreign port bound for any port in the United States, the consular officer, or other representative of the United States at or nearest such foreign port, shall immediately give information thereof to the Supervising Surgeon-General of the Marine-Hospital Service, and shall report to him the name, the date of departure, and the port of destination in the United States, and the consular officers of the United States

shall make weekly reports to him of the sanitary condition of the ports at which they are respectively stationed."

The object of the foregoing section of the law is to secure timely advice of the outbreaks of cholera and yellow fever, and of the probable transportation of the poisons of these preventable diseases in vessels bound for the United States; and consular officers for the United States are directed to put themselves into communication with the health authorities of their respective stations, and from the information obtained from such authorities, or from other reliable sources where no regularly constituted health authorities exist, to prepare and transmit by the mails to the Department of State, for the information of the Surgeon-General of the Marine-Hospital Service, on forms prescribed by the Department, weekly reports of the appearance, progress, or termination of cholera, yellow fever, small-pox, plague, or typhus occurring in their respective localities, and are further instructed to include in said reports information in relation to the prevalence of other preventable diseases, as diphtheria, enteric and scarlet fevers, &c., the prevailing disease or diseases in port, if any, and, when practicable, the annual death-rate per one thousand of the population as shown by the official record of deaths for the week reported. Special interest should be taken in the healthiness of vessels, reporting those arriving from or departing to the United States in a bad sanitary condition; also reporting the facts of any serious sickness or unhealthiness of seamen in port, or of crews arriving from or departing to the United States.

In the event of the outbreak of Asiatic cholera, yellow fever, or Asiatic plague, or other contagious disease in epidemic form, the Department must immediately be advised by cable or telegraph of such outbreak, using such abbreviation as the Department may from time to time direct.

The following cipher and abbreviations should be used:

"Cholera"—meaning cholera has appeared.

"Yellow"—meaning yellow fever has appeared.

The name of a country—meaning that the disease has made its appearance at several places in the country named.

The name of a vessel—meaning that the vessel named has departed from the place whence the dispatch is sent, bound for a port in the United States.

"Poison"—meaning that the vessel referred to, though leaving a then healthy port, has on board passengers or goods (baggage) coming from a district infected with cholera or yellow fever.

When cholera or yellow fever has appeared at several places in a country, name the country only after the word "cholera" or "yellow," as the case may be; if it has appeared at the place only from which the dispatch is sent, do not repeat the name of that place in the body of the dispatch, but if at any other particular place, name it.

In a dispatch announcing the departure of a vessel to a port in the United States, the port of departure will be understood to be the place from which the dispatch is sent; hence the name of the port of departure need not be repeated. In the body of a dispatch the name of the vessel should be given first; second, the name of the country, when applicable; third, the day of departure, omitting the day of the month and of the year, as they will be understood without saying; fourth, the name of the port of destination (the importance of observing

this order will appear obvious when it is understood that many vessels bear the names of ports in the United States); fifth, the name of the disease, "cholera" or "yellow," as the case may be, should be given, provided the Department has not been already advised of the outbreak of the disease. When advice has once been given of the appearance of cholera or yellow fever at a certain port, the name of the disease need not be repeated in dispatches announcing the subsequent departure of vessels from that port.

When the name of a vessel is given without stating whether it is a steamer or sailing-vessel, it will be understood to be a steamer; if the vessel is a sailing-vessel, its proper designation should be prefixed. The sender of the dispatch should sign his last name only.

The consul will give to every master of a vessel bound to a port in the United States a bill of health, on the form prescribed by the Department, giving full information of the number of persons on board such vessel at the time of sailing, and the sanitary condition of the vessel so far as known, and also the sanitary condition of the port of departure at the time. At such ports as may from time to time be designated by the Department, a physician will be employed or detailed to make the necessary inspection of the vessel, her passengers, crew, cargo, and ballast. In case the master of any vessel shall refuse to receive a bill of health, the fact shall be immediately reported to the Department by cable, if necessary.

When a vessel having received a bill of health touches at any other port while *en route* to the United States, the consul at such port shall *visa* the bill of health, and note thereon such changes as may have taken place since its original issue.

Monthly reports of the bills of health issued must be made to the Department on the regular forms.

*Memphis, Tenn.*—Thirteen cases of small-pox were reported up to the 18th instant in the Memphis taxing district.

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*





## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 26. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., June 29, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended June 29, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended June 9 corresponded to an annual rate of 16.2 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 12.5, and the highest in Manchester, viz., 25.0 a thousand. Small-pox caused 6 deaths in Sheffield, 1 in Bristol, and 4 in Preston.

*London.*—One thousand two hundred and nineteen deaths were registered during the week, including measles, 25; scarlet fever, 23; enteric fever, 8; diphtheria, 22; whooping-cough, 33; diarrhoea and dysentery, 18. The deaths from all causes corresponded to an annual rate of 14.9 a thousand. Diseases of the respiratory organs caused 185 deaths; different forms of violence, 51; and 8 suicides were registered. In greater London 1,534 deaths were registered, corresponding to an annual rate of 14.5 a thousand of the population. In the "outer ring" 7 deaths from whooping-cough and 5 from diphtheria were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended June 9 in the 16 principal town districts of Ireland was 24.3 a thousand of the population. The lowest rate was recorded in Kilkenny, viz., 8.5, and the highest in Lisburn, viz., 43.5 a thousand. In Dublin 147 deaths were registered, including measles, 1; whooping-cough, 11; enteric fever, 3; scarlet fever, 3; and dysentery, 1.

*Straits Settlements.*—From the annual medical report of the civil hospitals, it is learned that "in Singapore sporadic cases of cholera occurred

in the middle of the year, but a great proportion of the patients were coolies, lately arrived from China, in some of the ports of which country cholera was prevalent at the time. One ship from China—the steamship ‘Amigo’—was quarantined on account of cholera; her passengers were landed at St. John’s Island, and cases of cholera appeared afterwards among them. Some other cases occurred also among a number of passengers from China who had been landed at St. John’s Island from a ship—the steamship ‘Bellerophon’—which came in with small-pox on board. Four Europeans died of cholera during the year, two of them having contracted the disease, as far as could be ascertained, on board the steamship ‘Spaniel,’ and the third, a sergeant of police, having become infected at a room in the central police station, where a lot of miscellaneous rubbish and property were kept. A native sergeant was also infected on the same day, and died. This room was at once cleared out, the rubbish burnt, and the place disinfected, and no more cases occurred. The fourth case was that of a boy who had recently come from another colony. It is possible that he brought the infection with him. A local outbreak of cholera occurred in the beginning of August in the old lunatic asylum. All the preventive measures we could use failed to stop the disease, and on August 12 all the patients were moved into the new asylum, which was fortunately nearly ready. After the removal, for a day or two, two or three cases occurred, which were promptly removed, and then the disease stopped. Thirty-seven cases of small-pox were reported as occurring during the year. In five of these cases death had occurred before any report was made to the police. Of the remaining thirty-two cases, twenty-five were treated at the small-pox hospital, Balestier Plain, with seven deaths, and the remaining seven—Europeans—were treated at the general hospital. Of the seven cases treated at the general hospital all recovered. In two only of these was infection contracted in Singapore. Of the other five cases, three were landed from ships, and two were children who had just come from Penang, where the disease was prevalent at the time.”

*Montevideo.*—Three hundred and seventy-two deaths were registered during the month of April, including small-pox, 43, and enteric and typhus fevers, 13.

*Santiago de Cuba.*—The sanitary inspector reports for the week ended June 16 “no small-pox or yellow fever.”

*Havana.*—Nine deaths from yellow fever and 1 from small-pox were registered during the week ended June 22, 1888.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Glasgow.....	June 9.....	545,678	211	.....	.....	.....	.....	.....	3	2
Amsterdam.....	June 9.....	389,916	154	.....	.....	.....	.....	1	.....	3
Munich.....	June 2.....	275,000	159	.....	.....	.....	.....	.....	2	3
Genoa.....	June 9.....	179,401	77	.....	.....	.....	.....	.....	.....	3
Trieste.....	May 19.....	154,500	85	.....	.....	.....	.....	.....	.....	1
Trieste.....	May 26.....	154,500	69	.....	.....	.....	.....	.....	3	1
Trieste.....	June 2.....	154,500	73	.....	.....	.....	.....	.....	.....	2
Stuttgart.....	June 9.....	125,510	33	.....	.....	.....	.....	.....	.....	.....
Bremen.....	June 2.....	122,000	38	.....	.....	.....	.....	.....	.....	.....
Barmen.....	June 2.....	109,000	47	.....	.....	.....	.....	.....	.....	1
Mayence.....	June 2.....	65,802	31	.....	.....	.....	.....	.....	1	.....
Cienfuegos.....	June 4.....	40,753	14	.....	.....	2	.....	.....	.....	.....
Cienfuegos.....	June 11.....	40,753	18	.....	.....	7	.....	.....	.....	.....
Sagua la Grande.....	June 9.....	15,605	24	.....	.....	.....	.....	.....	.....	.....
Carthagena, Col'a.....	June 9.....	13,000	3	.....	.....	.....	.....	.....	.....	.....
Matamoras.....	June 9.....	12,000	8	.....	.....	.....	.....	.....	.....	.....
San Juan del Norte.....	May 28.....	500	1	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

*Quarantine near New Orleans.*—At the request of the State Board of Health of Louisiana, a test of the efficiency of the methods of disinfection employed by that board has been made by Assistant Surgeon J. J. Kinyoun, United States Marine-Hospital Service, who was detailed for that purpose. The following is his report in full:

LABORATORY U. S. MARINE HOSPITAL,  
New York, June 12, 1888.

Dr. JNO. B. HAMILTON,  
*Supervising Surgeon-General U. S. Marine-Hospital Service.*

SIR: In accordance with your official order directing me to proceed to Louisiana, and there inspect the machinery and methods that are used by the State board of health in the enforcement of the quarantine regulations of that State, I have the honor to respectfully submit the following report of the inspection and work.

As it was the desire of the officers representing the State board of health to have the system thoroughly investigated and discover its defects, if any, it was found necessary to make quite a number of similar observations of different series before a definite conclusion could be reached. Considerable delay has occurred, owing to the fact that in the sulphur dioxide series all cultivations of the different micro-organisms thus subjected were found to be more or less contaminated from the air of the holds of vessels, and it became necessary to examine each cultivation by the "plate culture" method. Only a certain number could be thus treated each day. The principles of the methods of disinfection are correct, but faulty in their application. So far as it is possible, the methods now practiced will be so modified as to secure the greatest efficiency obtainable with the present form of apparatus, and as soon

as it can be done the station will be removed to another place, and a new plant erected, having sufficient capacity to handle and disinfect vessels thoroughly and expeditiously.

Arriving at New Orleans on the 5th of May, I called upon the president and secretary of the board of health, and made known to them the object of my visit. The president, Dr. C. J. Wilkinson, kindly perfected arrangements so that the quarantine station could be reached without delay. Leaving New Orleans on the morning of May 6, accompanied by Dr. Wilkinson, we embarked on the steamship "Alicia," arriving at the upper station at 11 a. m. Later in the day, together with the president and resident physician, Dr. Thos. Y. Aby, we visited the lower station, situated 1½ miles below the Head of the Passes, on Pass à l'Outre.

This station consists of a hospital and buildings for the resident physician and attendants; also, a small building situated about two hundred yards from the main building, and that was constructed for a small-pox hospital. No communication can be had with the main hospital save by boat. The buildings are erected on piles standing about 7 feet above the marsh, and during the season of high water there is at least 2 feet of water under the buildings. There are two wards—one for males and one for females. The male ward is 26 by 52 feet, and contains twenty-six beds; it is well ventilated and lighted, and is all that could be desired for the treatment of cases suffering from febrile diseases in a warm climate. The female ward is smaller, and is separated from the main building by at least 12 feet. It is divided by a partition, making two rooms about 12 by 20 feet. All buildings are connected, one with another, by verandas.

As a hospital, only one objectionable feature could be found, viz., that water-closets were placed within each ward, and no provision was made for the reception of the night-soil, it being allowed to drop into the water or on the ground below. We were informed by the resident physician that the closets were not intended for use in this manner, and that orders were given to that effect. In cases of an infectious or contagious nature, all discharges of patients were thoroughly disinfected by a strong, almost saturated solution of bichloride of mercury, which was constantly kept near. In cases of epidemic disease, where isolation of the sick and segregation of the healthy are required, the buildings are entirely too small for such purposes, and nothing better can be done than to retain them on board the vessel, as there is not sufficient dry ground near the station for the erection of tents.

To give an accurate description of the different stations—the methods *claimed to be practiced* in the disinfection of the baggage of passengers and crew, the cabin, deck, hold, and cargo—I have taken such parts as are relative thereto from the admirable brochure of Dr. Jos. Holt, ex-president of Louisiana Board of Health, entitled "The Quarantine System of Louisiana; Methods of Disinfection Practiced:"

"In describing the methods of disinfection used in the quarantine of Louisiana, it is necessary first to examine the system itself synthetically. There are three maritime approaches to New Orleans—the Mississippi River, which is the central and main avenue; the Rigolets, 30 miles to the eastward, a narrow strait connecting Lake Pontchartrain with Lake Borgne and the Gulf of Mexico; and the Atchafalaya River, near its debouchement into the bay of that name and Mexican Gulf, 82 miles to the westward.



"On account of the character of shipping coming through the two lateral approaches, 'light in tonnage and mostly from domestic ports,' the Rigolets and Atchafalaya are completely closed by a proclamation of forty days' detention against all vessels from quarantined ports, compelling such to seek the Mississippi as the only available route to New Orleans. This is done in order to avoid the immense expense of keeping up three completely equipped stations, and to concentrate at a single point the fight against infection.

"The quarantine in the Mississippi is a system composed of three stations, the first of which is an advance-guard inspection station, situated at Port Eads, 110 miles below New Orleans, where the waters of South Pass are jettied into the Gulf.

"When an inward-bound vessel comes into the offing she is immediately boarded by a thoroughly skilled medical officer, and a careful inspection is made of her sanitary record and present condition. If from a non-quarantined port and all is well, she is given pratique and goes on to the city. If from a quarantined port, but presenting a clean health record of voyage and no evidence of sickness of a dangerous or doubtful character, she proceeds to the upper quarantine station, situated on the left bank of the river, 70 miles below the city, where she is subjected to a full course of sanitary treatment, and is detained such length of time, not exceeding five days (except in rare instances, wherein further observation may be deemed necessary), as the board of health may provide.

"If upon inspection of a vessel entering the river she is found to be foul—that is, showing positive or suspicious evidences of infection, either in a person then ill or in a foul health record of voyage—she is at once remanded to the lower station, located on Pass à l'Ouvre, an unused outlet of the Mississippi, 103 miles below the city. The sick, if any, are at once removed to the hospital, where every provision has been made for them.

"The vessel, with the well on board, is dropped down-stream a few hundred yards and anchored. In the mean time the quarantine tug-boat, with its complete disinfecting outfit, has been telegraphed for, and speedily arrives from the upper station, when the work of disinfection begins, and does not cease until the vessel has been subjected to the most vigorous application of the bichloride of mercury, her atmosphere below deck completely replaced with one heavily charged with sulphurous oxide, and every article of baggage and ship's wardrobe has been saturated with the mercuric solution.

"A ship known to be infected with one of the three great pestilential diseases—small-pox, cholera, or yellow fever—can stand and must endure extraordinary treatment, even if clothing is wetted and some articles damaged. They who go down to the sea in ships assume the perils of the voyage, among which is this occurrence of finding themselves on an infected vessel and being compelled to undergo a cleansing, for they have no right to bring their perils ashore and endanger others.

"The immediate segregation of the sick and the well and disinfection of the ship and all baggage (in the case of a cholera-infected vessel extended to the disinfecting, washing-out and refilling of the water-tanks, destruction of the food supply, and revictualing the vessel) constitute the treatment of an infected vessel at this station. The ship, together with all on board, is held for observation a period of ten days or more, according to circumstances, when she is released and pro-

ceeds to the upper station, where the processes of sanitary treatment are repeated, with the addition of the use of moist heat applied to baggage, ship's apparel, &c. (which latter process will be described hereafter), and the vessel is then allowed to proceed to the city.

"This course of treatment at the upper station, while probably unnecessary, is enforced purely as an extraordinary precaution.

"Inasmuch as infected ships are the exceptions, but inasmuch, also, as the board of health will take no risk in the case of vessels from known infected or suspected ports, regardless of bills of health, the vast majority of vessels are treated at the upper station.

"Arriving at this station, the vessel is brought alongside the wharf. All on board—officers, crew, and passengers—are at once sent ashore, where they find ample accommodation in commodious shelter provided for their entertainment during the time occupied in the sanitary treatment of the ship and all baggage.

"As soon as this is completed, they are permitted to return aboard ship, where they remain under observation during the prescribed period, determined by the remoteness or nearness of the port against which these precautions are taken.

"The object of this brief detention for observation after sanitary treatment of the vessel has been completed is to allow for a probable outbreak of an infectious disease already incubating in the system of any one on board. As an essential part of the service, there is a tug-boat of sufficient power to move a sailing-vessel to or from the wharf.

"In addition to this requirement, this boat is equipped with a complete outfit for generating and applying germicidal gas for displacement of the entire atmosphere within the ship, transported perhaps directly from some infected port. In the hold of this tug is constructed a wooden tank of 2,000 gallons capacity, to hold the bichloride of mercury solution for the treatment of vessels in the Lower Quarantine as described. This tank is furnished with a steam-pump (made of iron, on account of the great resistance of that metal to amalgamation), supplied with  $\frac{1}{4}$ -inch rubber hose. (See Plate 1.) In the sanitary treatment of a vessel in quarantine there are three processes of disinfection concurrently applied.

#### "APPLICATION OF BICHLORIDE OF MERCURY.

"The first is the wetting of all available surfaces of the vessel, excepting cargo but including bilge, ballast, hold, saloons, forecastle, decks, &c., with a solution of the bichloride of mercury, made soluble by an equal weight of muriate of ammonia, in the proportion of one part to one thousand of water. \* \* \*

"Immediately adjoining the Quarantine Wharf, and near its water edge, is constructed a heavy frame-work of piles, each 12 inches in diameter. This structure has an ample base, is pyramidal, and 45 feet in height above mean level of the river. On top of this is a circular wrought-iron tank, capable of holding 8,000 gallons of the mercuric solution. (See Plate 2.) In order to prevent contact of the latter with the iron, the interior of the tank is painted over with three coats of red lead and two of paraffine paint. The top of the tank is closed by a secure cover to prevent access of light to the solution. This, together with the general exterior, is painted black.

"On the top of this cover is placed centrally a 60-gallon wooden

cask, in which is dissolved the mercuric salt, which is then emptied into the tank through a wooden faucet. Seventy pounds are used for one charge.

"In the tank near the lower edge are three heavy galvanized-iron faucets, to each of which is screwed a lead of  $\frac{1}{4}$ -inch four-ply rubber hose, the farther ends of which lie on the wharf. These are lengthened by additional sections to reach any part of the largest vessel. To the far extremity of each hose is attached a short, wide nozzle, provided with a stop-cock.

"During this disinfection all three are simultaneously used—fore, aft, and amidships. For spraying we use a perforated heavy block-tin rose, 4 inches across the face, similar to an ordinary watering-pot spray. These are made with a shank about 6 inches long, to fit snugly into the open end of the pipe.

"On a single vessel we average 1,500 gallons of solution, but often use 3,000. The process requires from thirty minutes to two hours, according to circumstances.

#### "SULPHUROUS OXIDE FUMIGATION.

"As soon as the men have completed the work of 'bichloriding' below decks, the fumigating-pipe is then extended from the quarantine tug-boat lying alongside. (See Plates 1 and 2.) It is lengthened by sections being fitted together like stove-pipe, and conducted down a convenient hatchway to the bottom of the hold, or as near the keelson as possible, preparatory to the fumigation of the entire vessel (and cargo if any) with sulphurous oxide. In the case of a sailing-ship, one hatchway gives access of the sulphurous gas to the entire hold, but in large steamers the hold is subdivided by bulk-heads into two or more distinct compartments, which must be treated separately.

"In undergoing treatment the cargo is not disturbed, except when the removal of bags of coffee is required to permit the passage of the fumigating-pipe, which is 12 inches in diameter, down into the dunnage at the bottom of the cargo.

"I have given explicit instructions to coffee importers, whereby the expense of removing bags to make this well or shaft may be avoided, by allowing a clear inside space of 15 inches, placed in the center of the main hatch in a sailing-vessel, or in the center of each hatch in a steamship having bulk-head compartments. The frame-work of this shaft is set before loading, and should be cut flush with the top of the cargo.

"This simple arrangement avoids all handling and delay.

"When the connections are made and the fumigating-pipe is arranged, the fan on the tug-boat is started, and the process of displacing with sulphurous oxide the entire atmosphere within the ship begins. The length of time required to complete the fumigation varies from thirty minutes to three hours, according to size of vessel, number of compartments, &c. The quantity of commercial roll sulphur used varies from 100 to 700 pounds per vessel.

"The apparatus invented for rapidly evolving and supplying the germicidal gas consists in a battery of eighteen furnaces, each supplied with a pan to contain the sulphur during combustion. These furnaces open into a common reservoir, to the farther end of which is connected a powerful exhaust-fan, Sturtevant's, No. 29. (See Plates 3 and 4.)

"The gas drawn by the fan is driven into a 12-inch galvanized-iron pipe, through which it is conducted over the side and down the hatchway of the vessel into the bottom of the hold.

"The gas as it is driven into the vessel is quite hot, but would extinguish rather than create fire. The outflow should not impinge directly against bags of coffee or bales of textiles, if it can be avoided, in order to prevent formation of sulphuric acid and some slight injury therefrom at that point. In treating coffee, and for convenience in some other instances, the vertical lead of pipe into the hold is made of asbestos cloth, closely and heavily woven for our purpose.

"Every opening is closely battened during the process and remains so for at least eight hours after it is discontinued.

"The apparatus throughout is made ample in size and power for rapidity of work and economy in wear and tear by lessening velocity and friction. The fan is run by a special engine at a slow rate as compared with its capacity, but driving into the ship 180,000 cubic feet per hour of atmosphere surcharged with sulphurous oxide.

#### "APPLICATIONS OF DRY AND MOIST HEAT.

"While these two processes of sanitary treatment of the vessel are going on, all bedding, ship's linen, cushions, mattresses, flags, mosquito-nets, curtains, carpets, rugs, all personal baggage and wearing apparel of whatever description, are removed from the ship to a commodious building in close proximity (see Plate 5), in which these articles are treated by moist heat at a temperature of not less than 230° F.

"The apparatus for this work consists in a steel 40 horse-power steam-boiler (see Plate 9) for supplying steam to a superheating-chamber a few feet distant, and which I will now describe. (See Plates 6, 7, and 8.)

"The dimensions of this chamber, taken interiorly, or inside measure, are 60 feet long, 11 feet wide, and 7 feet high. The frame-work is composed of 3 by 3 inch seasoned pine lumber, joined as in the construction of a frame house. Upon the outside of this frame-work (and corresponding to the weather-boarding in the case of a house) is nailed tongued-and-grooved flooring-material  $\frac{3}{4}$  of an inch thick by 6 inches wide.

"The inside, or interior of the ends, rear, and top of the chamber, is ceiled with the same material, and a flooring of the same is also laid. Upon these interior surfaces is tacked heavy 'Russian hair-cloth or felting,' and upon this, at intervals of 3 feet, are nailed parallel strips of wood,  $1\frac{1}{2}$  by 2 inches, and, in turn, upon these strips is fastened another sheathing or ceiling of flooring-plank, as already described. This secures an air-space between the hair-cloth and inner ceiling. Upon this now smooth interior surface of wood is finally tacked and held in place by very broad-headed nails, or, better, by nails supplied with tin disks or washers, a double layer of 'asbestos building-felt,' well lapped and securely tacked, thus rendering the interior of the chamber fire-proof.

"By the foregoing-described construction it will be seen that the walls of the chamber, which are 8 inches in thickness, consist of seven non-conducting media—first, the outer layer of planking; second, 3 inches of air-space; third, an inner ceiling of planking; fourth, one thickness of "Russian hair-cloth;" fifth,  $1\frac{1}{2}$ -inch air-space; sixth, a



third layer of  $\frac{3}{4}$ -inch planking; seventh, a double layer or interior lining of heavy asbestos felting.

"The front wall is divided into forty panels 18 inches wide each (see Plate 6), which represents that number of racks contained within the chamber. Upon the bars of these racks the clothing, &c., is hung for exposure to disinfection by moist heat. (See Plate 7.) These racks are constructed with a front and rear panel united by horizontal bars, six to each side. Each rack is suspended overhead on traveling rollers upon an iron rod which extends from the rear wall of the chamber to a support 10 feet in front of the chamber, the rod, therefore, being 20 feet in length.

"By this arrangement overhead the racks may be drawn out and pushed in with facility, thus avoiding tracks or rods on the floor, obstructing the movements of employes.

"When drawn out the full length of 10 feet, the rear panels of the racks securely close the chamber, as do the front panels when the racks are pushed in, thus admitting the heat to the chamber during the time of hanging the articles of clothing, &c., on the rack-bars preparatory to disinfection.

"For this admirable device, and indeed for the entire skeleton of the superheating-chamber, including the dry-heat double steam-coils, we are indebted to the Troy Laundry Machinery Company, Chicago, Ill. We have found the purchase of this apparatus, constructed to include certain of our specifications, to be the most economical and satisfactory we could have desired.

"The interior surface of each front panel is lined with a layer of Russian hair-cloth, over which is applied a double layer of asbestos felting.

"At intervals of  $7\frac{1}{2}$  feet a bulk-head of 1-inch tongued-and-grooved flooring is constructed, subdividing the chamber into eight compartments. These bulk-heads, or partitions, are made fire-proof by a covering of a double layer of asbestos felting. The object of this arrangement is to provide against the spread of fire in the event of its occurrence.

"In addition to this provision, there is a double lead of 1-inch fire-hose connected with a steam-pump near the boiler, and at all times ready, within fifteen seconds' notice, to turn on two streams of water upon any rack on which fire might have originated. These minute specifications concerning provision against fire are particularly appreciated by ourselves. It cost us two fires and the destruction of a large amount of property to learn a lesson which experience alone could teach. Lacking experience and precedent, these accidents could not have been foreseen, and therefore could not have been provided against. They were the result of an underrating and failure to appreciate the prodigious force the contrivance invented placed at our will to invoke.

"Under the present arrangement, including early use of free steam, fire is hardly possible; but if it should occur, we are prepared instantly to draw out the burning panel, to strip it of clothing, and to put out the fire. With reasonable care and watchfulness on the part of the employes, there need be absolutely no danger of loss by fire.

"The superheating of this chamber is so provided as to furnish at will dry or moist heat, or both, and by a turn of the hand a temperature of 300° F. can be obtained.

"Within and at the end of this chamber next to and connected with



the boiler are two manifolds, one above the other, to which is connected a system of forty-five  $\frac{1}{2}$ -inch steam-pipes (aggregating 5,509 lineal feet), placed horizontally near the floor of the chamber, running its full length, and supplied with a "bleeder" for conveying off the water of condensation. This double coil furnishes the dry heat. (See Plate 8.)

"Above and in close proximity to this system of pipes is extended a horizontal screen of galvanized iron,  $\frac{1}{2}$ -inch mesh, to catch and so prevent the coming in contact with the superheating-pipes any article falling from the racks. (See Plate 7.)

"The moist heat is supplied by a 1-inch steam-pipe, laid centrally in the midst of the above-described dry heat pipes, and running the entire length of the chamber, constituting a steam-main, connected with the boiler and controlled as the others, by a ball-valve on the outside. This pipe is perforated by eighty  $\frac{1}{8}$ -inch holes, so placed as to furnish steam to each rack.

"During the time of hanging the articles of clothing, &c., on the racks, the dry heat is turned on and the temperature raised to 190° F., made known by a thermometer having a large mercurial column and suspended near the center of the chamber, working on a slide of traveling rod in such manner, when it is desired to make a reading, as to allow of being drawn forward (by a cord extending outside) to a long narrow pane of glass set in the panel. This thermometer should have a scale of at least 275° F.

"As each rack is filled it is put back into place. By the time the last of the articles have been hung on the racks, the entire mass of the material within the chamber has attained a temperature between 190° and 200° F., when free steam is turned on; the thermometer speedily rises to a point varying between 230° and 240° F., at which it is maintained for a period of twenty minutes.

"The steam-pressure in the boiler at the beginning of this process registers between 100 and 110 pounds by the steam-gauge; at the end of the process of blowing in steam the pressure will have fallen to about 60 pounds.

"The steam is now entirely cut off from the chamber, the racks are drawn out and their contents removed.

"During the process of steaming, every article is perceived to be saturated and intensely hot, the steam freely permeating to the interior of mattresses, double blankets, &c., but so great is the heat in the texture of the fabrics as to immediately expel all moisture upon drawing the racks and exposure to the open air. Shirts, collars, &c., instantly assume the crisp dryness they possessed before exposure, losing the musty smell of long packing in a trunk.

"Silks, laces, the most delicate woolen goods, show no signs of injury whatever from the treatment.

"Of course articles of leather, rubber, and whalebone would be injured by the heat, and are therefore disinfected with the mercuric solution, and not permitted to go into the heated chamber.

"Time required to charge chamber with apparel for disinfection, thirty minutes; time required for moist heat, twenty minutes; for removal of articles, fifteen minutes—a total of sixty-five minutes. A large steamship, particularly a passenger-vessel, may require two or three charges of the chamber. Amount of coal consumed, from two to four barrels per vessel.

"In the summer of 1885 we devised and put up a chamber of the

above general plan, but wholly inadequate as to size for the requirements of our service. This was replaced by one operating on the same principle, but 50 feet long and supplied with a 20-horse-power boiler, which latter proved too small for rapid work. This apparatus was burned last spring.

"Our present chamber and supply-boiler are of the dimensions given in the appended plates.

"We prepared the plans of the foregoing-described apparatus during the summer of 1884. Obtaining a liberal appropriation of \$30,000 from the State legislature for the avowed purpose of establishing a new system of quarantine through the elaborations of purely experimental work, and thoroughly indorsed and sustained in all our efforts by the progressive spirit of the press of New Orleans and by the merchants, we put the new system into practical operation, and threw open the Mississippi to commerce June 10, 1885.

"As it stands to-day, we sincerely believe in a nearly perfected state, it is the consummation of experimental effort through a long and tedious process, beset with difficulties of the most perplexing and often disheartening kind."

\* \* \* \* \*

Testing the efficacy of the methods practiced and materials used in the disinfection of ships, cargo, and baggage, &c., as set forth in the foregoing pages, was with special reference to the germicidal powers for which it is claimed.

Accordingly, before leaving New York, a large number of cultivation-tubes were prepared, containing blood serum, peptone gelatine, agar-agar, and rags. A large number of these were inoculated from pure cultivations of the micro-organisms here mentioned, viz:

*Spirillum cholerae Asiaticae*.

*Spirillum Finkler-Prior*.

*Bacillus anthracis*.

*Bacillus typhi abdominalis*.

*Bacillus coli communis* (Hueppe).

*Bacillus murisepeticus*.

*Bacillus pneumoniae* (Friedlander).

*Bacterium of yellow fever* (Finlay).

*Staphylococcus pyogenes albus*.

*Staphylococcus pyogenes aureus*.

*Streptococcus erysipelatus*.

Several of the series of above-named micro-organisms were obtained of Dr. T. M. Prudden; also, one specimen of the micro-organism claimed to be the cause of yellow fever, by Dr. Finlay, of Havana, Cuba; another of the same organism was furnished by Dr. S. T. Armstrong, who had only a few days prior to my departure received it from Dr. Finlay.

Whether the organism referred to is the cause of yellow fever we leave for others to confirm or disprove.

In carrying out the following series of experiments, it was intended to show whether the process of disinfection applied to such vessels was sufficient to destroy the growth of these micro-organisms, and in but few instances was the process varied or the time lengthened from that which is practiced from opening of the quarantine season to June 1, when the time is lengthened to five days. It was also for the pur-

pose of deciding whether the time imposed on vessels prior to June 1 was sufficient for the prevention of epidemic disease.

In carrying out these experiments, several classes were conducted at the same time, and, to have them correspond with the description of the machinery, &c., the same order will be followed.

Since the opening of the season, vessels engaged in the fruit trade and plying between ports subject to quarantine are not subjected to the same treatment as others. Should they have any passengers aboard who have with them any baggage or articles of clothing save what they wear, they are compelled to stop at the upper station, where the baggage of passengers, crew, ship's linen, &c., are subjected to the steaming process, while the cabin and deck are washed down with bichloride solution.

If no baggage is aboard, they are given pratique to the city, where the cargo is discharged and vessel cleansed by washing the deck and burning sulphur in the hold. The quantity of sulphur used was not learned.

Whenever practicable, all the surfaces inside the hold of the vessel and between decks are wetted by a simple  $\frac{1}{2}$ -inch hose with nozzle, the rose being dispensed with, as it is claimed that there can be a more thorough wetting accomplished than by its use. This is invariably done before the vessel is treated to sulphur dioxide, in order to delay it as little as possible.

The flat surfaces of the decks are thoroughly washed with a rose sprinkler, but around among the corners, hatches, or perchance hog-heads of sugar that are sometimes on deck, the process is defective, because a great many places are not reached. The same can be said of the disinfection of the cabin, lockers, &c., only a partial disinfection is accomplished; for, to wet all surfaces, with the present arrangements it would be necessary to almost submerge them with the solution.

The carpets, rugs, rubber and leather goods, trunks, and valises are sprinkled with the same bichloride solution.

Several experiments were made upon the goods, clothing and surfaces thus treated, and it was found that the solution did not cover all the surface, for portions of carpets, scrapings from floor and underside of the forecastle, deck, &c., when placed upon sterilized nutrient media, showed evidences of germ development. No apparent difference could be noticed between portions removed from the floor of the forecastle after being saturated for one hour with the bichloride and other portions of the same that had not been reached by the solution. The last can be explained by the fact that the forecastle was in an extremely filthy condition, and, there being such an abundance of organic matter, the bichloride was rendered inert.

For the general application of this solution to the ship, especially to cabin, carpets, &c., we suggested that a spraying apparatus be substituted, made by leading a rubber hose from the boiler of the tug and connecting it with the supply-pipe of the bichloride solution in such a manner as to make a "Richardson's spray producer" on a large scale, so that by its use all surfaces, cracks, &c., can be thoroughly and evenly wetted.

Former experience teaches that placing dirty and greasy clothing in the heating-chamber is not a safe procedure with the present apparatus, for to them have been traced the cause of fires breaking out during the steaming process. They are now left on deck and sprinkled with

bichloride of mercury, in the following manner: One attendant stands ready with hose in hand while another places the clothing to be thoroughly wetted down on the deck, turning them over from time to time, while the other plays a stream of bichloride upon them.

The car upon which the clothing, bedding, goods, &c., is placed for the purpose of transporting them to the steam-heating chamber is not disinfected before the goods are placed upon it to be taken back to the ship.

The following tables were made for the purpose of demonstrating the variations of temperature obtained in the heating-chamber:

TABLE I.—Heating-chamber empty.

Observation.	Time.	Steam-pressure.	Heat—character.	Compartments.				
				1.	4.	5.	6.	8.
				Panel 2.	Panel 20.	Panel 21.	Panel 31.	Panel 39.
		<i>Pounds.</i>		o	o	o	o	o
1.....	4:22	110	Dry.....	117	102	93.5	.....	99.0
2.....	4:32	100	Dry.....	123	110	106.0	.....	104.0
3.....	4:39	110	Dry.....	127	114	110.5	.....	106.0
4.....	4:50	100	Dry.....	129	116	116.5	110	107.5
5.....	5:00	100	Dry.....	129	119	119.5	110	115.0
6.....	5:11	110	Dry and moist.....	132	126	117.0	119	110.0
7.....	5:16	80	Dry and moist.....	132	126	127.0	116	115.0
8.....	5:21	70	Dry and moist.....	132	126	127.0	116	115.0
9.....	5:29	80	Dry.....	133	.....	124.0	116	110.0
10.....	5:35	80	Dry.....	133	126	123.0	112	111.0

Time, 53 minutes.

Thermometers placed in the center of the chamber, suspended from the cross-bars of panels. The greatest amount of heat was obtained in compartment No. 1, panel 2, where there is a large "header" for the dry coil.

TABLE NO. 2.

Observation.	Time.	Steam-pressure.	Heat—character.	Compartments.					
				1.	4.	5.	7.	8.	
				Panel 2.	Panel 20.	Panel 21.	Panel 31.	Panel 39.	Panel 37.
		<i>Pounds.</i>		o	o	o	o	o	o
*1.....	8:10	100	Dry.....	.....	.....	.....	.....	.....	(†)
2.....	8:55	105	Dry.....	105	83.5	106.6	69.0	88.0	.....
3.....	9:00	100	Dry and moist...	112	101.0	107.7	77.0	95.5	.....
4.....	9:05	95	Dry and moist...	.....	105.0	108.3	82.0	103.0	.....
5.....	9:10	85	Dry and moist...	.....	101.5	118.3	86.0	104.0	.....
6.....	9:15	80	Dry and moist...	115	100.5	119.4	87.0	105.0	.....
7.....	9:20	70	Dry and moist...	118	104.0	120.5	87.0	105.5	.....
8.....	9:25	65	Dry and moist...	120	104.0	120.0	90.0	105.0	.....
9.....	9:30	75	Dry.....	109	100.0	118.3	87.5	104.0	.....
10.....	9:35	80	Dry.....	109	96.6	116.6	84.0	105.0	.....
11.....	9:40	95	Dry.....	100	95.0	110.5	81.0	105.0	.....
12.....	9:45	90	Dry and moist...	.....	95.0	.....	.....	105.0	.....
13.....	9:55	75	Dry and moist...	.....	103.0	120.5	100.0	106.0	.....

\* Chamber filled with goods, and thermometers in position.

† Electric thermometer failed to register 120°.

In panels Nos. 2, 20, 31, and 39, U. S. M.-H. S. thermometers; in No. 21, quarantine thermometer was placed; compartment No. 1, filled with ladies' wearing apparel; compartments Nos. 2 and 3, partly filled with clothing of crew; compartments Nos. 4, 5, 6, and 7, filled with mattresses and blankets; compartment No. 8, mattresses and clothing of male passengers.

TABLE NO. 3.

Observation.	Time.	Steam-pressure.	Heat—character.	Compartments.					
				1.	5.	4.	3.	8.	5.
				Panel 2.	Panel 21.	Panel 20.	Panel 12.	Panel 38.	Panel 24.
		<i>Pounds.</i>		o	o	o	o	o	o
1.....	* 9:00								
2.....	9:15	100	Moist .....	76.0	88.8	80.0	76.0		
3.....	9:20	95	Moist .....	103.0	112.2	90.0	83.0		
4.....	9:25	80	Moist .....	109.0	120.2	95.5	88.0		
5.....	9:30	75	Moist .....	111.0	131.6	97.0	94.0		
6.....	9:35	60	Moist .....	111.5	115.7	98.0	95.5		
7.....	9:39	60	Moist .....					100	
8.....	9:40	60	Moist .....	110.0	113.8	99.0	99.0		
8.....	9:42		Moist .....						82.5

\* Chamber was filled with goods and thermometers placed.

Time, 27 minutes.

Compartments Nos. 1 and 5, nearest boiler, filled with bedding; compartments Nos. 3 and 4, filled with mattresses, blankets, &c.; compartments Nos. 5 and 6, filled with ship's linen, clothing of crew; compartments Nos. 7 and 8, filled with clothing of officers, and a few panels reserved for the clothing of attendants. U. S. M.-H. S. thermometers placed in panels 2, 20, 38, and 24. Electric thermometers placed in center of panel 38, and no clothing in at least one foot of it. Indication, 100° in 24 minutes. A self-registering thermometer placed among cultivation-tubes that were laid on mattresses registered 82.5°. Thermometers 2 and 20 placed in position same as in Table No. 1.

TABLE NO. 4.

Observation.	Time.	Steam-pressure.	Heat—character.	Compartments.					
				1.	2.		3.	5.	8.
				Panel 2.	Panel 6.	Panel 10.	Panel 12.	Panel 21.	Panel 39.
		<i>Pounds.</i>		o	o	o	o	o	o
1.....	11:40	100	Dry and moist...	65.0		(*)	120.0	91.1	104.0
2.....	11:45	100	Dry and moist...	100.5			131.0	102.7	119.0
3.....	11:50	90	Dry and moist...	109.0			133.5	118.8	122.5
4.....	11:55	80	Dry and moist...	111.0			134.0	126.3	123.5
5.....	12:00	75	Dry and moist...	111.5			134.0	126.6	123.5
6.....	12:05	65	Dry and moist...	110.0			132.5	126.1	122.0
7.....	12:07		Steam turned off.		95.5				

\* Failed to register 120°.

Time, 27 minutes.



Compartments Nos. 1 and 2, filled with mattresses; compartments Nos. 3 and 4, filled with mattresses and clothing of crew; compartments Nos. 5 and 6, filled with clothing; compartments Nos. 7 and 8, filled with clothing of officers and passengers. Nos. 2, 6, 12, 39, U. S. M.-H. S. thermometers; No. 21, quarantine thermometer. Electric thermometer, indicating 120°, placed in compartment No. 2, panel 10, at extreme end of panel, surrounded by a free air-space of at least one cubic foot. Self-registering thermometer, No. 6, placed upon and surrounded by mattresses filled with hair and excelsior. About 8 or 9 inches of air-space between goods and thermometer. Reading, 95°.

TABLE NO. 5.

Observation.	Time.	Steam-pressure.	Heat—character.	Compartments.					
				1.		4.	5.	8.	
				Panel 2.	Panel 16.	Panel 20.	Panel 21.	Panel 36.	Panel 39.
1.....	9:30	<i>Pounds.</i> 100	Dry and moist...	○	○	○	○		99.0
2.....	9:35	100	Dry and moist...	80.5	.....	100.5	97.7	(*)	105.0
3.....	9:40	80	Dry and moist...	81.5	.....	100.5	103.8	.....	109.0
4.....	9:45	75	Dry and moist...	90.0	.....	101.5	112.2	.....	110.0
5.....	9:50	65	Dry and moist...	96.0	.....	106.0	112.7	.....	109.0
6.....	9:55	65	Dry and moist...	102.0	.....	107.0	112.2	.....	108.5
7.....	9:55	55	Dry and moist...	105.0	.....	106.5	112.2	.....	
8.....	9:57	55	Steam cut off	.....	76	.....	.....	.....	

\* Electric thermometer failed to register 100°.

Time, 25 minutes.

All compartments filled to their full capacity with goods of all kinds. Electric thermometer placed in panel 36, compartment No. 8, among mattresses and blankets, failed to indicate 100°, while panel 39, in free air-space, indicated 110°. Self-registering thermometer placed in panel 16, among mattresses, and a pillow thrown over it. Others, 2, 20, and 39, were placed in the usual manner through the panel, and allowing about 8 to 10 inches air-space to intervene between the bulb and clothing.

Despite the effort made to keep the steam above 60, it fell to 55 pounds.

TABLE NO. 6.

Observation.	Time.	Steam-pressure.	Heat—character.	Compartments.			
				1.	5.	7.	8.
				Panel 2.	Panel 21.	Panel 34.	Panel 39.
1.....		<i>Pounds.</i>		○	○	○	○
2.....	7:25	100	Dry.....	.....	.....	.....	.....
3.....	8:00	100	Dry and moist.....	101.0	87.7	.....	87.0
4.....	8:05	100	Dry and moist.....	111.0	100.0	.....	88.5
5.....	8:10	90	Dry and moist.....	114.0	113.3	.....	93.0
6.....	8:15	80	Dry and moist.....	113.0	111.1	.....	97.5
7.....	8:20	75	Dry and moist.....	117.5	118.8	.....	101.5
8.....	8:25	70	Dry and moist.....	119.0	122.2	.....	103.0
9.....	8:30	60	Dry and moist.....	118.0	121.1	67	104.0

Time, 30 minutes.

All compartments filled with mattresses, ship's linen, and clothing of crew. Nos. 2 and 39, thermometers inserted through panel. No. 34, self-registering thermometer suspended among mattresses. No. 21, free; nothing placed on panel. Greatest heat around mattresses was 67°.

TABLE NO. 7.

Observation.	Time.	Steam-pressure.	Heat—character.	Compartments.				
				1.	3.	5.	7.	8.
				Panel 2.	Panel 12.	Panel 21.	Panel 34.	Panel 39.
		Pounds.		°	°	°	°	°
1.....	1:25		Dry .....			82.2		
2.....	1:40	115	Dry and moist .....	83.0		84.4		85.0
3.....	1:45	110	Dry and moist .....	100.0		92.2		88.0
4.....	1:50	105	Dry and moist .....	107.0		100.0		92.5
5.....	1:55	105	Dry and moist .....	101.0		110.0		98.0
6.....	2:00	100	Dry and moist .....	112.0		109.4	100	99.5
7.....	2:05	95	Dry and moist .....	115.0		111.1	*100	105.0
8.....	2:10	80	Dry and moist .....	117.0		116.6	100	109.0
9.....	2:15	50	Dry and moist .....	116.0		117.2	100	110.0
10.....	2:20	40	Dry and moist .....	116.5	99	116.6	100	113.0

\* Above 100°.

Time, 35 minutes.

The chamber was lightly charged. Compartments Nos. 1 and 2, clothing of crew, mattresses; four panels empty. Compartments 3 and 4, same as above; three panels empty. Compartments 5, 6, 7, and 8, clothing and ship's linen. Thermometer inserted through panels in the usual manner. Self-registering thermometer placed on mattresses, indicating 99°. Electric thermometer placed among clothing indicated 100° in 20 minutes.

#### TESTING THE APPLICATIONS OF DRY AND MOIST HEAT.

I was informed by Dr. Aby that his instructions from the board of health were to the effect that clothing, bedding, &c., after being placed within the chamber, should be raised to a temperature of 85° C., after which the steam should be turned on, and kept for 20 minutes after the thermometer indicates 100° C. This manner renders fire less imminent.

The time of exposure of micro-organisms to the heating process was not varied from the prescribed rules, save in two instances.

Cultivations of micro-organisms on various substances were placed, in each of the following experiments, in positions where the minimum heat was to be expected.

EXPERIMENT NO. I.—Cultivation-tubes of peptone agar-agar inoculated with—

*Spirillum cholerae Asiaticae*,  
*Bacillus anthracis*,  
*Bacillus typhi abdominalis*,  
*Bacillus coli communis*,  
*Bacterium* of yellow fever (?),

were placed in a wire basket and hung in compartment No. 8, panel 39, the one most distant from the boiler, and upon which but little

clothing was hung. In 16 minutes the temperature (dry heat) reached 79.4°, when steam was turned on and kept 20 minutes, cultivations removed, and inoculations made therefrom, the temperature being ascertained by placing a self-registering thermometer upon the surface of agar-agar within the cultivation-tubes. Repeated examinations show all growths to have been killed.

EXPERIMENT No. II.—Cultivations of—

*Spirillum cholerae Asiaticae* on blood serum,

*Bacillus anthracis* on agar-agar,

*Bacillus typhi abdominalis* on agar-agar,

*Bacillus coli communis* on agar-agar,

*Bacillus pneumoniae* on agar-agar,

*Bacterium yellow fever* (?) on agar-agar,

*Staphylococcus pyrogenes albus* on blood serum,

*Staphylococcus pyrogenes aureus* on blood serum,

were suspended in among blankets and mattresses in compartment No. 5, panel 31. A quarantine thermometer registered 88.8° dry heat in central chamber. Steam turned on and kept 43 minutes. Temperature among blankets fell to 82.5°.

Inoculations made from these cultivations into peptone gelatine showed the *bacillus anthracis* and *bacterium yellow fever* alive; all others were dead.

The temperature was taken on the outside of the cultivation-tubes.

EXPERIMENT No. III.—Chamber filled with goods, consisting chiefly of bedding and clothing of the crew. The articles were not hung closely together, as the chamber was filled to only three-quarters of its capacity.

Cultivations of—

*Spirillum cholerae Asiaticae*,

*Spirillum Finkler-Prior*,

*Bacillus anthracis*,

*Bacillus pneumoniae*,

*Bacillus typhi abdominalis*,

*Bacillus coli communis*,

*Bacterium yellow fever* (?),

*Staphylococcus pyrogenes albus*,

*Staphylococcus pyrogenes aureus*,

were placed in a basket and arranged upon and between mattresses. Thermometers being placed among cultivations, temperature registered 85.5° C. dry heat in center chamber. Steam turned on and allowed to remain 27 minutes. All micro-organisms dead except those of *bacillus anthracis* and *bacterium yellow fever*. Thermometer among cultivations indicated 95.5° C.

EXPERIMENT No. IV.—Chamber partially filled, compartment No. 7 containing principally the mattresses and clothing of the crew. A hair mattress was opened, and tubes containing cultivations of—

*Spirillum cholerae Asiaticae*,

*Spirillum Finkler-Prior*,

*Bacillus anthracis*,

*Bacillus typhi abdominalis*,

*Bacillus coli communis*,

*Bacterium yellow fever*,

*Bacillus murissepticus*,

*Staphylococcus pyrogenes albus*,

*Staphylococcus pyrogenes aureus*,

were placed within and exposed to moist heat for 25 minutes. A self-registering thermometer placed among tubes indicated 75°. Examination of growths showed those of *Bacillus anthracis*, *Bacillus murisepeticus*, and *Bacterium yellow fever* to be alive; all others were killed.

EXPERIMENT No. V.—Chamber well charged with goods. A series of cultivation-tubes containing rags (both cotton and woolen) that had been inoculated with—

*Bacillus anthracis*,  
*Bacillus typhi abdominalis*,  
*Bacillus pneumoniae*,  
*Staphylococcus pyogenes albus*,  
*Staphylococcus pyogenes aureus*,

were placed in among mattresses and blankets and exposed for 20 minutes to moist heat; temperature indicated, 62.5° C. Examination showed all growths dead save that of anthrax.

EXPERIMENT No. VI.—Clothing and bedding of steamship "Saturina," from Cuba to New Orleans, placed in heating-chamber; all compartments filled. Owing to the uncleanness of the crew's bedding, we suggested that a longer time be given in the steaming process. Cultivations on agar-agar of—

*Spirillum cholerae Asiaticae*,  
*Spirillum Finkler-Prior*,  
*Bacillus anthracis*,  
*Bacillus typhi abdominalis*,  
*Bacillus pneumoniae*,  
*Bacillus coli communis*,  
*Staphylococcus pyogenes albus*,  
*Staphylococcus pyogenes aureus*,

were placed in compartment No. 7, panel 34, arranged on mattresses, and surrounded by pillows. Temperature of middle chamber (quarantine thermometer), 76.6° C. Left for 55 minutes; thermometer among cultivations indicated 67°; inoculations show all killed, except *Bacillus coli communis* and *Bacillus anthracis*.

EXPERIMENT No. VII.—Chamber was lightly charged, several panels in each compartment being empty. Cultivations made upon rags of the following:

*Spirillum cholerae Asiaticae*.  
*Bacillus typhi abdominalis*.  
*Bacterium yellow fever*.  
*Staphylococcus pyogenes albus*.  
*Staphylococcus pyogenes aureus*.

These were suspended among clothing, chiefly underwear, and allowed to remain 40 minutes. A thermometer placed in a tube containing similar media registered 99°. Inoculations from the tubes show that all have been killed except the *Bacterium of yellow fever*.

EXPERIMENT No. VIII.—Chamber filled with goods—bedding and clothing. Cultivations of—

*Spirillum cholerae Asiaticae*,  
*Bacillus anthracis*,  
*Bacillus typhi abdominalis*,  
*Bacillus coli communis*,  
*Bacterium yellow fever*,  
*Staphylococcus pyogenes albus*,

were placed in heating-chamber, in its center, arranged upon blankets

and clothing. These were subjected to moist heat for 40 minutes. Temperature indicated near cultivations was 69°.

The bacillus anthracis, bacillus typhi abdominalis, bacillus coli communis, and staphylococcus pyogenes albus were found to be alive.

#### SULPHUR DIOXIDE FUMIGATION.

The quantity of sulphur consumed in the fumigation of each vessel is from 100 to 400 pounds, according to the size of the vessel. Those arriving at quarantine during our stay at the station varied from 100 to 2,000 tons burden. About 100 pounds of sulphur are consumed in an hour, and forms about 1,170 cubic feet of sulphur dioxide. If, as is claimed, 180,000 cubic feet of air per hour be driven into the hold or compartment of a vessel, the strength of the gas would be, approximately,  $\frac{1}{10}$  per cent.

That that quantity of air is not driven into the hold is proven by the fact that in quite a number of volumetric analyses, made on various vessels at the close of fumigation (for the purpose of determining the quantity of sulphur dioxide present), shows from 2 to 6 per cent. to the 100 pounds of sulphur, the capacity of the compartments being about the same, viz., 20,000 cubic feet. This does not represent the full amount of the gas generated, for in all vessels there is constantly present a certain amount of moisture, which absorbs the gas.

In the generation of the sulphur dioxide there is formed in the "battery" a certain amount of nitrous oxide, and, the gas being quite hot (130°) as it enters the vessel, every factor is present for the rapid production of sulphuric acid. The greatest percentage of gas was found in holds containing coffee, still less in sugar, and least in those vessels that had been treated with the bichloride solution previous to fumigation. In these the percentage was notably diminished (2 per cent.), the gas being absorbed by the wetted surfaces, also uniting with the mercuric salt, forming a compound which impairs germicidal power of both and destroys penetrating properties of the gas.

We were informed that it was the custom formerly to put the exhaust-fan in operation for an hour before, driving pure air into the hold, thus aerating the vessel and cargo before fumigation was commenced. This was not put in practice during our stay. Vessels hailing from ports known to be infected are treated to a larger quantity of gas, 200 pounds or more of sulphur being used to each compartment.

In testing the germicidal power of the fumigating process it was for determining whether the short time of detention practiced prior to June 1 was of sufficient duration to insure complete disinfection of vessel and cargo.

Where the compartments are empty or communicating with the engine-room or chain-locker, the hatches are not sealed by the customs authorities, and there is no assurance that the sulphur fumes remain longer than a short time after the disinfection is finished.

It was noticed in several instances where the forward hatch communicated with the chain-locker or engine-room that the hatches were removed immediately after fumigation and a wind-sail put in place for the purpose of driving out the fumes, so as to enable the vessel to leave for New Orleans as soon as possible.

Vessels having their hatches sealed are insured of at least fifteen hours' disinfection. The fore-castle, after being thoroughly wetted with bichloride solution, is treated to the "pot plan," the longest period of time being three hours, after which it was immediately permitted to be thrown open by the crew. The following experiments were made:



EXPERIMENT No. 1.—Spanish bark "Pedro," from Havana to New Orleans. Thoroughly wetted down with bichloride solution. A basket containing cultivations on agar-agar that had been inoculated fifteen days previously with—

*Spirillum Finkler-Prior*,  
*Bacillus anthracis*,  
*Bacillus typhi abdominalis*,  
*Bacillus coli communis*,  
*Bacterium yellow fever*,

was placed about 60 feet from the hatch where the fumigating-pipe enters. The cotton plugs were removed from the test-tubes. These were left for a period of 90 minutes, the time occupied in the fumigation. One hundred and fifty pounds of sulphur were used.

Inoculations made from time to time from these tubes show that all the growths were not influenced by the exposure.

EXPERIMENT No. 2, SO<sup>2</sup>.—Steamship "Morgan;" rear hold compartment filled with sugar in sacks. A basket containing cultivations prepared for exposure was placed in the hold about 16 feet distant from the hose leading into the compartment; tubes containing—

*Spirillum Finkler-Prior*.  
*Bacillus anthracis*.  
*Bacillus pneumoniae*.  
*Bacillus murisepticus*.  
*Bacterium yellow fever*(?).  
*Staphylococcus pyogenes albus*.  
*Staphylococcus pyogenes aureus*.

Time of exposure, 2 hours and 20 minutes. One hundred and fifty pounds of sulphur used. Owing to the character of cargo, no bichloride solution was used.

Inoculations made from growth of each micro-organism show no effect upon them.

EXPERIMENT No. 3, SO<sup>2</sup>.—Two baskets were prepared for placing in the forward hold of steamship "Morgan;" capacity, 101 tons; cargo of sugar in bags; basket No. 1 containing cultivations of—

*Spirillum cholerae Asiaticae*, blood serum, rags.  
*Bacillus coli communis*, agar-agar.  
*Streptococcus erysipelatus*, blood serum.

Basket No. 2—

*Spirillum Finkler-Prior*.  
*Bacillus anthracis*.  
*Bacillus coli communis*.  
*Bacillus pneumoniae*.  
*Bacterium yellow fever* (?).

Basket No. 1 placed 15 feet from the pipe; basket No. 2, 30 feet from pipe. Cultivations exposed for 1 hour and 20 minutes; fumigation lasted 1 hour. About 100 pounds of sulphur used. Cultivations had to be removed, as the vessel was ready to leave the dock; forward hatch was not sealed. All cultivations alive; no inhibitory effect noted.

EXPERIMENT No. 4.—Steamship "Floridian," from Colon to New Orleans, having but little freight; several compartments empty. Cultivations of—

*Spirillum cholerae Asiaticae*, blood serum,  
*Spirillum Finkler-Prior*, blood serum,  
*Bacillus anthracis*, agar-agar,

*Bacillus typhi abdominalis*, agar-agar,  
*Bacillus murissepticus*, blood serum,  
*Bacillus cholera nostras*, agar-agar,  
*Staphylococcus pyogenes albus*, agar-agar,  
*Staphylococcus pyogenes aureus*, agar-agar,  
 were placed in forward compartment (empty). Compartment fumigated for 2 hours, and allowed to remain for 8 hours and 30 minutes. Inoculations were made from time to time, and it was found that those of *cholerae Asiaticae*, Finkler-Prior, *staphylococcus pyogenes alba* and *aureus*, and *bacillus murissepticus* were dead. No effect was noted in any way upon anthrax, typhoid, and *cholera nostras*.

EXPERIMENT No. 5.—Cultivations prepared by placing a small quantity of sterilized cotton in test-tubes and moistening it with a small quantity of distilled water; the cotton was then infected with several growths of the following:

*Spirillum cholerae Asiaticae*.  
*Spirillum Finkler-Prior*.  
*Bacillus anthracis*.  
*Bacillus coli communis*.  
*Bacterium yellow fever* (?).  
*Staphylococcus pyogenes albus*.  
*Staphylococcus pyogenes aureus*.

These were placed in an empty compartment that had been thoroughly washed down with the bichloride solution. About 125 pounds of sulphur used. Volumetric examination of gas shows 8 per cent. Time cultivations were exposed, 3 hours and 50 minutes. Only that of *cholerae Asiaticae* was killed.

EXPERIMENT No. 6.—Cultivations on agar-agar, made only 24 hours before, of—

*Spirillum cholerae Asiaticae* (2),  
*Spirillum Finkler-Prior*,  
*Bacillus anthracis*,  
*Bacillus typhi abdominalis*,  
*Bacillus coli communis*,  
*Bacillus pneumoniae*,  
*Bacterium yellow fever* (?),  
*Staphylococcus pyogenes albus*,  
*Staphylococcus pyogenes aureus*;  
 Also, cultivations on cotton and woolen rags of—  
*Spirillum Finkler-Prior*,  
*Bacillus coli communis*,  
*Bacillus pneumoniae*,  
*Bacillus typhi abdominalis*,  
*Bacillus murissepticus*,  
*Staphylococcus pyogenes aureus*,  
*Streptococcus erysipellatus*.

Both series were placed in the forward compartment of steamship "Lizzie Henderson," a small steamer plying between Tampa and New Orleans. After fumigation the hatch was battened down and the cultivations left until the vessel arrived in New Orleans, when they were taken out and inoculations made therefrom into fresh agar-agar. Time of exposure, 24 hours. Of the growths upon agar-agar, those of *bacillus pneumoniae*, Finkler-Prior, and *cholerae Asiaticae* were killed. None of those on rags affected.

EXPERIMENT No. 7.—Cultivations made 24 hours before upon the surface of agar-agar of—

*Spirillum Finkler-Prior*,  
*Spirillum cholerae Asiaticae*,  
*Bacillus anthracis*,  
*Bacillus typhi abdominalis*,  
*Bacillus coli communis*,  
*Bacillus pneumoniae*,  
*Bacterium yellow fever* (?),

placed in forward hold of steamship "Hutchinson," down under bags of sugar. Fumigation for 1 hour and 20 minutes; then hatch closed; 15 hours later, while proceeding to the city, the hatch was thrown open, and 9 hours thereafter, on arrival in New Orleans, the basket was removed. All germs found living.

EXPERIMENT No. 8.—Potato placed in large test-tubes and inoculated with—

*Spirillum cholerae Asiaticae*.  
*Spirillum Finkler-Prior*.  
*Bacillus anthracis*.  
*Bacillus typhi abdominalis*.  
*Bacillus coli communis*.  
*Bacillus pneumoniae*.  
*Bacterium yellow fever* (?).  
*Staphylococcus pyogenes aureus*.

These were placed in a basket and wrapped in an old mattress, which was lowered into an empty compartment of the steamship "Saturnina." Fumigated for 2 hours; 200 pounds of sulphur used. The mattress was taken out 4 hours after. All growths dead except anthrax, typhi abdominalis, staphylococcus pyogenes aureus, cholera nostras, and yellow fever. Test-tubes containing aga-aga and gelatine show that the gas in the above-mentioned time penetrates to the depth of three-quarters of an inch. Percentage of gas, 6 per cent. Hatch sealed by customs officer.

EXPERIMENT No. 9.—Recent cultivation on agar-agar of—

*Spirillum cholerae Asiaticae*,  
*Spirillum Finkler-Prior*,  
*Bacillus anthracis*,  
*Bacillus coli communis*,  
*Bacterium yellow fever* (?),  
*Staphylococcus pyogenes albus*,

were placed in hold of bark "Antonio Georgio," in ballast from Havana to New Orleans. Ballast and interior of hold well washed down with bichloride solution; fumigation, 1½ hours; 150 pound sulphur used; time of exposure, 2 hours. No effect on the organisms.

EXPERIMENT No. 10.—A basket containing surface cultivations on agar-agar of—

*Spirillum cholerae Asiaticae*,  
*Bacillus anthracis*,  
*Bacillus typhi abdominalis*,  
*Bacillus coli communis*,  
*Bacillus murissepticus*,  
*Staphylococcus pyogenes albus*,  
*Bacterium yellow fever*,

was placed in forward compartment of steamship "Inventor," down

under bags of coffee, being well covered up; fumigation lasted 4 hours; 275 pounds of sulphur consumed. Hatch was then closed for 7 hours, when it became necessary, on account of the chain-locker communicating with the compartment, to open the hatch and place wind-sail in position, in order to drive out the gas, so that anchor could be raised.

The basket was removed on arrival in New Orleans, 20 hours after, at which time the fumes were still quite strong. Examination showed all cultivations to be alive, though slight inhibitory effect was noticed.

Cultivation-tubes containing agar-agar and gelatine that were exposed at the same time to  $\text{SO}^2$  completely inhibited the growth of all micro-organisms tested.

EXPERIMENT No. 11.—Cultivations on agar-agar of—

*Spirillum cholerae Asiaticae*,

*Bacillus anthracis*,

*Bacillus typhi abdominalis*,

*Bacillus murissepticus*,

*Staphylococcus pyogenes albus*,

placed in rear compartment of steamship "Inventor," at a point farthest from the entrance of  $\text{SO}^2$ . Cargo, sugar; fumigation for 4 hours and 30 minutes; 300 pounds sulphur used; hatch then sealed. On arrival in New Orleans, 22 hours later, the hatch was opened and an attempt made to remove the basket, but the fumes of the gas were so strong that this could not be accomplished for 2½ hours. Examination of the cultivations showed that all micro-organisms were dead, except that of anthrax.

Cultivation-tubes, containing agar-agar and gelatine, showed the same inhibitory power as in the preceding experiment.

EXPERIMENT No. 12.—A liter of air was collected in sterilized vessels before and after the application of sulphur dioxide. Examination was made for the purpose of determining whether or not the gas exercised a germicidal effect on the micro-organisms of the air in the ship's hold.

A series was collected that had been exposed 1, 2, 4, and 8 hours, respectively, samples having been collected previous to application of the gas for the purpose of making control observations. None of the series showed diminution in number.

EXPERIMENT No. 13.—Cultivation-tubes, containing peptonized agar-agar, gelatine, and rags, exposed for 1, 2, and 4 hours, show a decided inhibitory effect on all micro-organisms that were tested. Those exposed for 6, 8, and 20 hours to sulphur dioxide killed all non-spore-bearing germs.

It has been our intention to show by the foregoing observations upon the methods practiced in carrying out the present system of quarantine at this station whether or not it is efficient; if not, to show its defects, and how remedied.

In the evolution of such an establishment, the many difficulties that must have stood in the way of such an undertaking, due credit must be given to those gentlemen who formulated the theory and put in practical operation the present system of disinfection.

From the series of observations made in determining the temperature of the chamber for the application of dry and moist heat, it is clearly shown that the time prescribed is entirely too short when the chamber is filled with goods; more especially is this noticed when the chamber is filled with such goods as blankets, mattresses, and cushions.

Unless a longer period of time is given to each charge, it is certain that only a partial disinfection is accomplished.

It was suggested to Drs. Wilkinson and Aby that the defects of the present style of steaming apparatus could be best overcome by adopting the application of dry and moist heat under a pressure of from 10 to 20 pounds. To accomplish this it would be necessary to have new machinery. Instead of the steaming-chamber now in use, to have constructed a large chamber of boiler-iron, capable of standing at least 25 pounds pressure to the square inch, and provided with one bulk-head door that could be properly secured to make it steam-tight, being provided with suitable appliances for ascertaining the temperature in any part of the chamber. In this manner the disinfection by steam and dry heat could be thoroughly accomplished and much more speedily than at present.

Lighter articles, such as clothing, &c., when not too much crowded, received sufficient heat to disinfect them.

We are informed by the president of the board, Dr. Wilkinson, that the matter was laid before the health board, and it was by resolution decided to remove the present location of the quarantine station to a place further down the river, in order that there could be complete isolation; and, guided by the result of the experiments undertaken, a heating-chamber capable of sustaining sufficient pressure from within will be erected, thus insuring an equal distribution of heat and the possibility of attaining and maintaining a much higher temperature than at present; also that an order would be given to the resident physician to the effect that the steaming-chamber should not be so heavily charged, and the time of exposure be extended to a sufficient limit to insure a proper degree of heat.

It is believed that if before the application of sulphur dioxide to the holds and cargoes of vessels, the holds be thoroughly aerated by means of the exhaust-fan and the use of a greater quantity of sulphur, confining the gas in the vessel, say, a period of not less than 36 hours, then the application of the bichloride solution to the hold and between decks will accomplish a thorough disinfection of the surfaces of vessel and cargo.

It is shown that in the short process of fumigation prior to June 1 the gas does not penetrate to any depth in such cargoes as coffee, sugar, &c. After June 1, the time of detention being five days, there is insured a thorough application of the gas in its greatest germicidal power.

The following conclusions may be drawn:

1st. That the application of bichloride solution to interior of the cabin, carpets, rugs, trunks, valises, rubber and leather goods should be made in such manner as to insure the moistening of all surfaces.

2d. The chamber should not be charged to more than half its capacity, and the time lengthened to at least one hour.

3d. That the time imposed on vessels that have undergone the fumigating process prior to June 1 should be longer, and the application of bichloride to the interior of the hold should be done after the gas has been confined at least thirty-six hours.

4th. That the establishment of the present style of apparatus is a great stride in the right direction, and has demonstrated its feasibility and the correctness of the principles involved.

The president, Dr. C. J. Wilkinson, asserts that whatever degree of heat has been obtained, it is certain that no case of yellow fever has developed on any vessel that has been subjected to this process, a fact, however, which was not uncommon under previous methods.



PLATES TAKEN FROM REPORT OF DR. JOS. HOLT, ON  
 "THE QUARANTINE SYSTEM OF LOUISIANA." \*

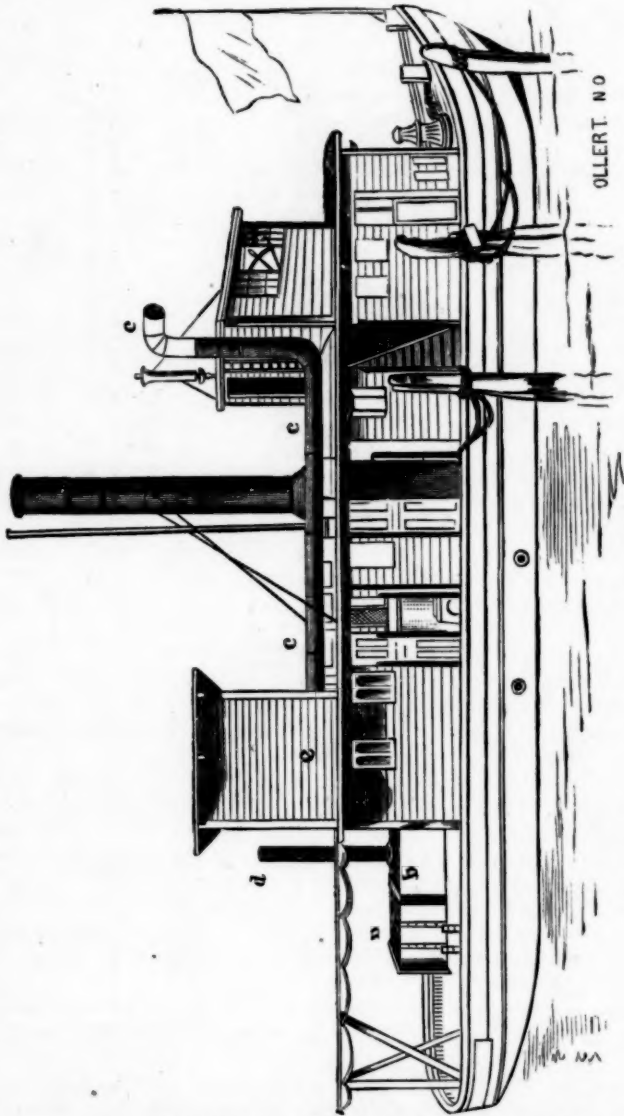


PLATE 1.—TUG-BOAT WITH FUMIGATING APPARATUS.

a. Furnace. b. Reservoir for reception of gas. c. Discharge-pipe, conveying gas to ship's hold. d. Escape-pipe for gas when fan is at rest and sulphur is burning; closed by a valve when fan is in motion. e. House protecting from weather the machinery for driving fan and containing accelerating gearing.

\*Loaned by the State Board of Health of Louisiana.



PLATE 2.

View of disinfecting-wharf, showing tug fumigating vessel; elevated tank containing 8,000 gallons of bichloride of mercury solution, 3 leads of hose from tank to ship. Gangway leading to building containing superheating-chamber.

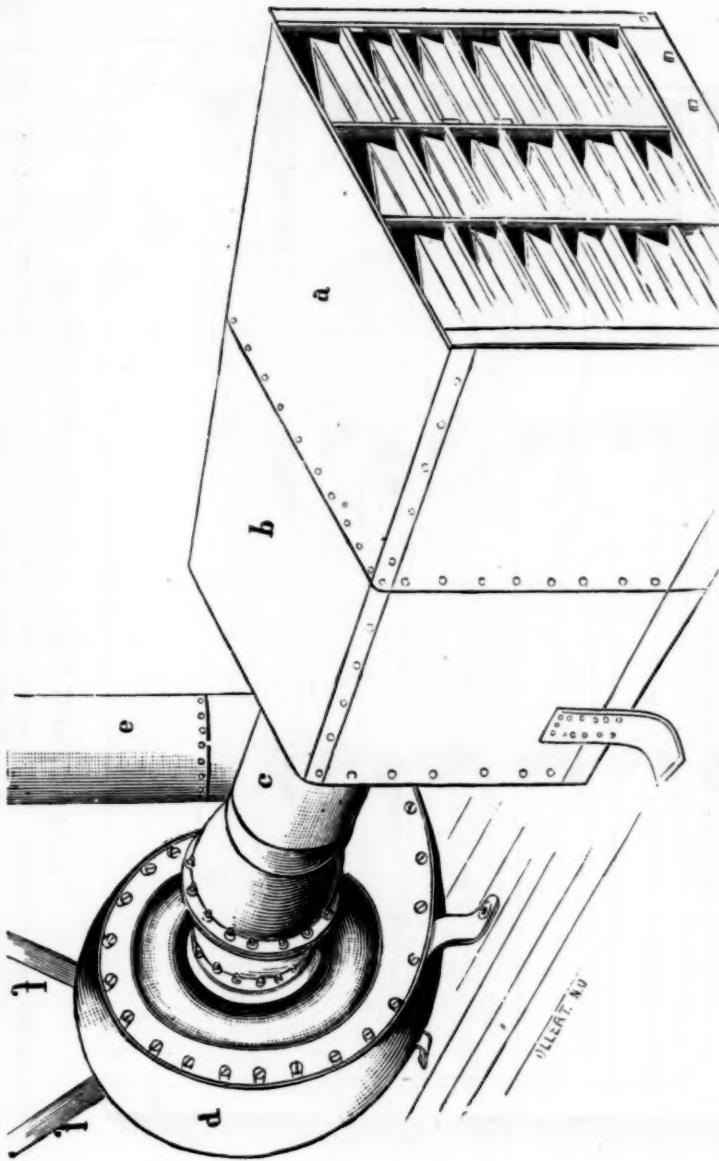
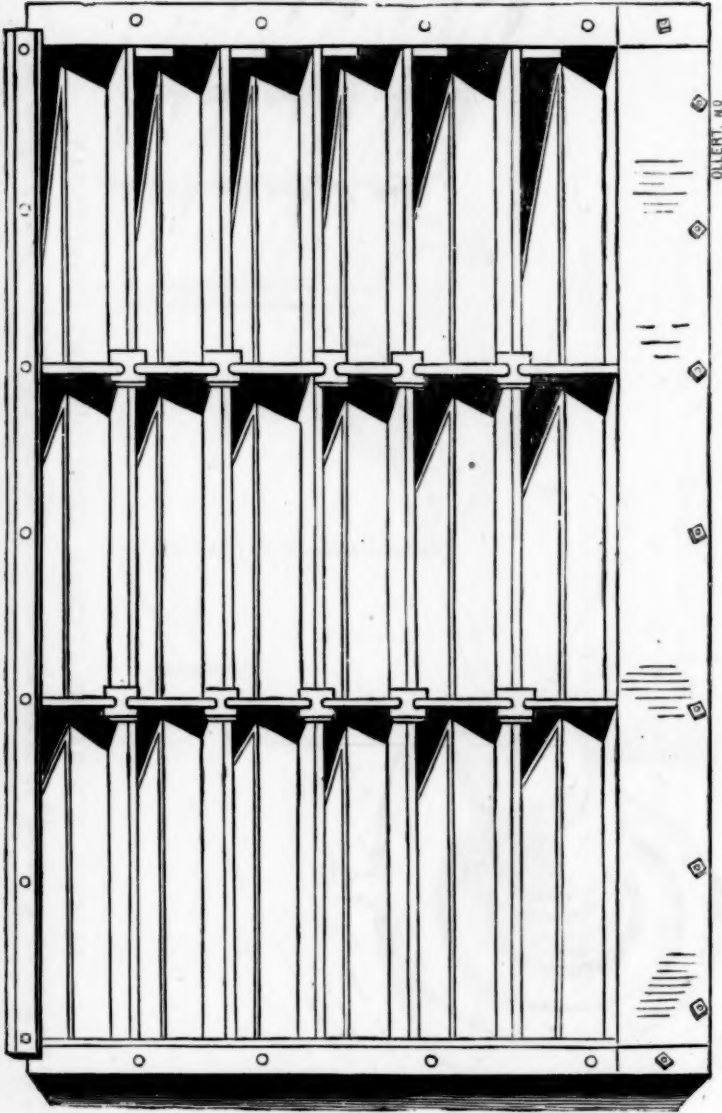


PLATE 3.—FUMIGATING-FURNACE, RESERVOIR, AND EXHAUST-PAN.

a. Furnace of cast-iron,  $\frac{1}{2}$  inch thick; 3 feet wide, 3 feet long, 2 feet high. Upper and lower plates grooved for reception of partitions, and sides shouldered for same, as shown in Plate 4. b. Reservoir, No. 10 iron, same dimensions as furnace. c. Exhaust-pipe connecting reservoir and fan. d. Exhaust-fan, same, as shown in Plate 4. e. Exhaust-pipe from fan made of No. 20 galvanized iron. f. Driving-belt. Height of legs supporting furnace and reservoir, 10 inches. On reservoir at letter b should be shown a 12-inch opening for escape-pipe, as indicated at d, Plate 1.



**PLATE 4.—FRONT VIEW OF FUMIGATING-FURNACE.**

Dimensions of each compartment, 12 x 3¼ inches. Pans of cast-iron, 5-16 inch thick, 1½ inches deep, 11 inches wide, and 2 feet 10 inches long, outside measure. Free space above pan, about 1½ inches.

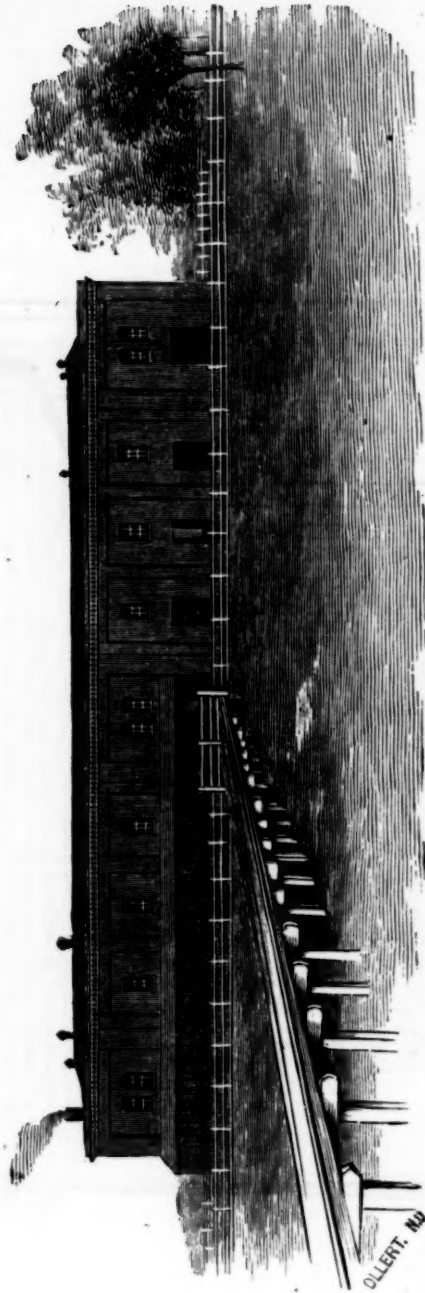
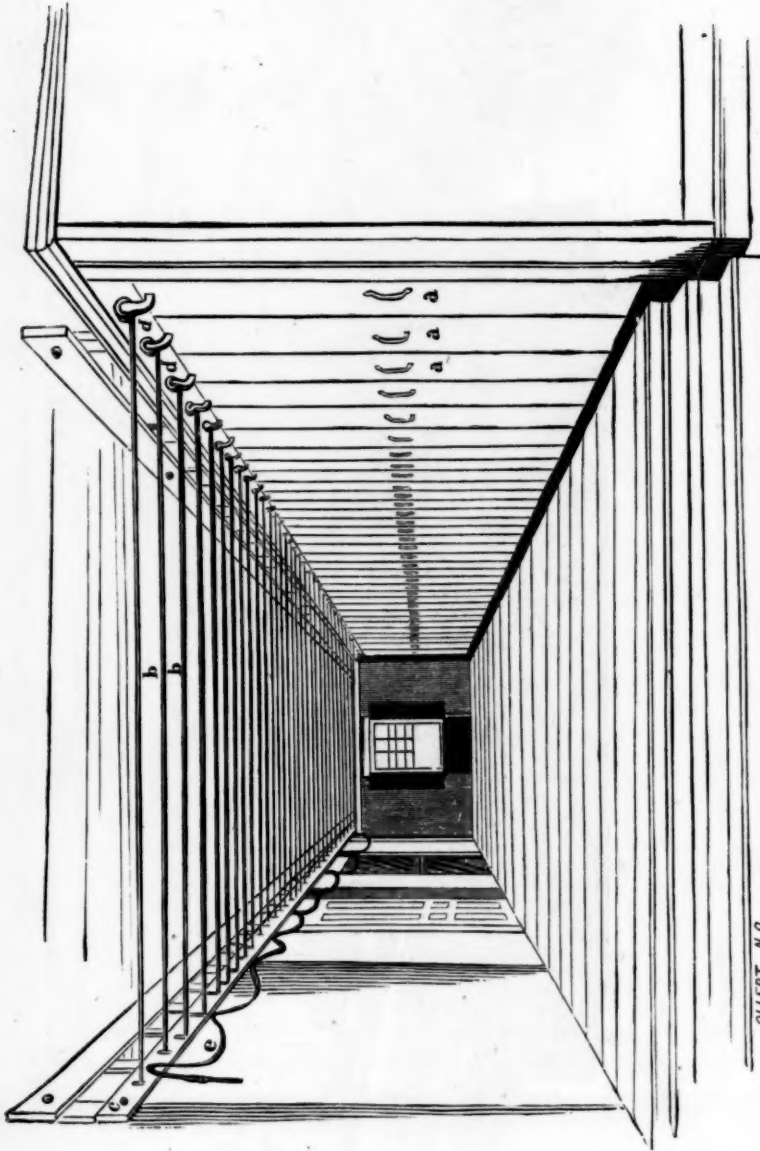


PLATE 5.

Brick building in which is located the superheating-chamber; gangway in front connecting with disinfecting-wharf.

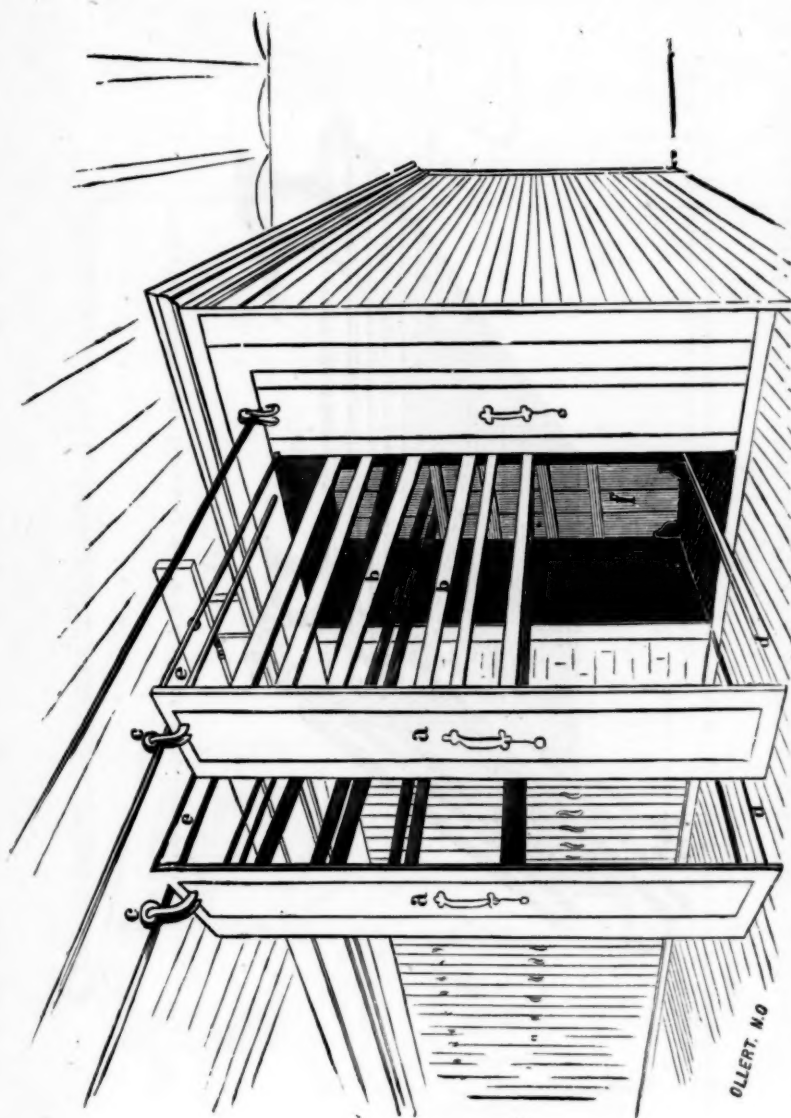




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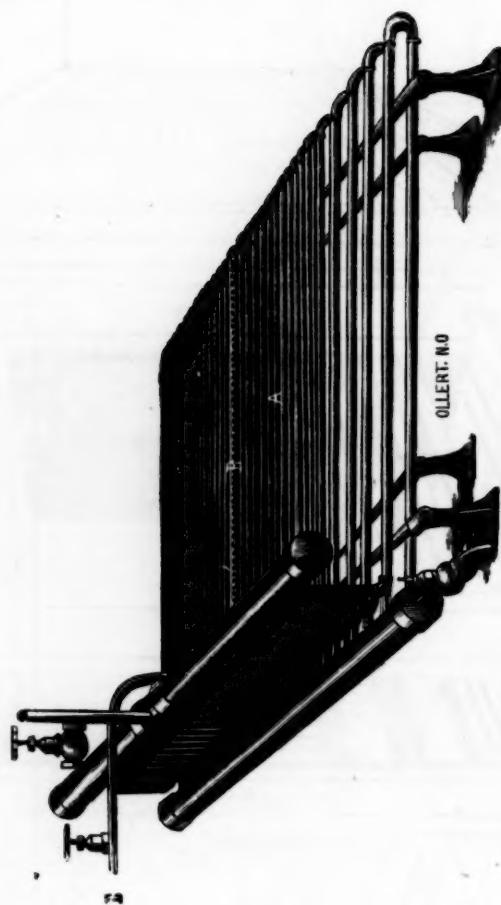
**PLATE 6.—FRONT VIEW OF CLOSED SUPERHEATING-CHAMBER (60 feet long).**

*a.* Panels. *b.* Rods upon which panels are suspended and travel. *c.* Outer support of rods. *d.* Rollers suspending panels on rods. *e.* Fire-hose.

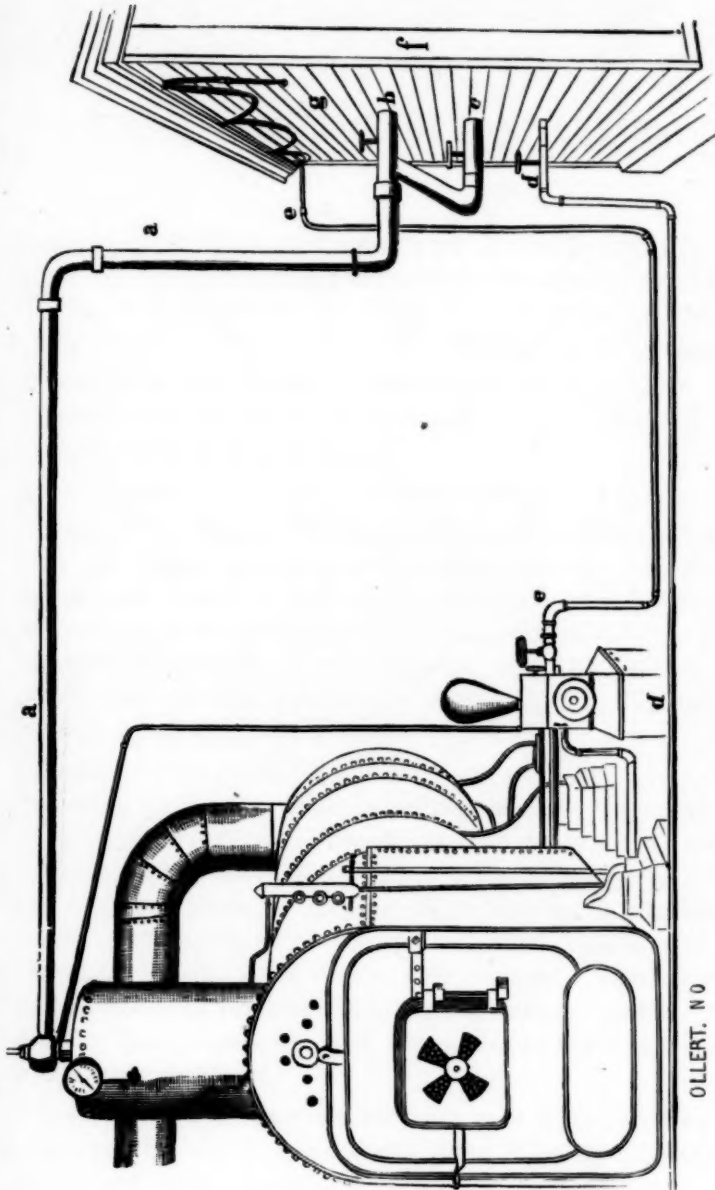


**PLATE 7.—SUPERHEATING-CHAMBER; TWO PANELS DRAWN OPEN.**

a. Panels. (Two lower rack-bars not shown.) b. Rack-bars. c. Rollers. d. Iron bars connecting front and rear panels. e. Rods upon which panels are suspended and travel. f. Rear panel. Galvanized-iron  $\frac{1}{2}$ -inch mesh screen in bottom of chamber.

**PLATE 8.**

Superheating steam-coil for dry heat, *b-b*. Perforated steam-pipe for moist heat.



OLLERT. NO

PLATE 9.—BOILER AND STEAM CONNECTION WITH SUPERHEATING-CHAMBER.

*a.* Steam-main from boiler. *b.* Pipe supplying dry heat. *c.* Pipe supplying moist heat. *d.* Bleeder. *e.* Pipe from pump supplying fire-hose. *f.* Front of chamber. *g.* End view of chamber.

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*





## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 27. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., July 6, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended July 6, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended June 16 corresponded to an annual rate of 16.2 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 9.9, and the highest in Manchester, viz., 27.9 a thousand. Small-pox caused 2 deaths in Sheffield, 1 in Bristol, 6 in Preston, 1 in Manchester, 2 in Hull, and 1 in Leeds.

*London.*—One thousand one hundred and sixty-seven deaths were registered during the week, including measles, 21; scarlet fever, 19; diphtheria, 18; whooping-cough, 34; enteric fever, 8; diarrhœa and dysentery, 16. The deaths from all causes corresponded to an annual rate of 14.2 a thousand. Diseases of the respiratory organs caused 213 deaths; different forms of violence, 71, and 14 suicides were registered. In greater London 1,438 deaths were registered, corresponding to an annual rate of 13.6 a thousand of the population. In the "outer ring" 8 deaths from whooping-cough, 6 from scarlet fever, and 6 from diphtheria were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended June 16 in the 16 principal town districts of Ireland was 22.5 a thousand of the population. The lowest rate was recorded in Dundalk, viz., 4.4, and the highest in Kilkenny, viz., 33.8 a thousand. In Dublin 167 deaths were registered, including whooping-cough, 5; enteric fever, 2; scarlet fever, 4; and diarrhœa, 3.

*Scotland.*—The deaths registered in 8 principal towns during the week ended June 16 corresponded to an annual rate of 20.0 a thousand of the population, which is estimated 1,299,000. The lowest mortality was recorded in Dundee, viz., 15.2, and the highest in Glasgow, viz., 23.9 a thousand. The aggregate number of deaths registered from all causes was 505, including measles, 13; scarlet fever, 5; diphtheria, 1; whooping-cough, 5; fever, 3; and diarrhoea, 9.

The death rate during the preceding week corresponded to an annual rate of 18.5 a thousand.

*Netherlands.*—The deaths registered in the principal cities of the Netherlands, having an aggregate population of 1,129,676, during the month of April, corresponded to an annual rate of 24.1. The lowest rate was recorded in Haarlem, viz., 19.7, and the highest in Arnhem, viz., 36.1.

*Bordeaux.*—Four hundred and seventy-three deaths were registered during the month of May, 1888, including enteric fever, 4; scarlet fever, 1; diphtheria, 14.

*Fayal, Azores.*—The United States consul, in his dispatch dated May 29, 1888, relative to small-pox in the Island of Terceira, states that "it continues there, and passengers thence were quarantined at the other islands until now, when an order from the home government has forbidden the mail-packets to receive at that island either cargo or passengers. At the Island of St. Michaels the disease manifested itself in two of its most distant villages from the town, but has been prevented from spreading thus far."

*Preston, England.*—The United States consul at Liverpool, in his dispatch dated June 11, 1888, states that "small-pox is now raging in an epidemic form at Preston, a sea-port of 103,234 inhabitants, distant about 35 miles north of this city, at the head of the River Ribble. The disease assumed an epidemic form about the 4th instant, since which time the total number of registered cases is 183, of which 7 were fatal. During the last few days the number of cases reported has decreased, but some of them were of a more virulent type than those previously registered. The medical offices of health have recommended the abandonment of all public assemblies for the present, and every precaution is being taken to arrest the spread of the disease."

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris.....	June 16.....	2,260,945	890	.....	.....	8	.....	6	6	32
Glasgow.....	June 16.....	545,678	242	.....	.....	.....	.....	3	12	1
Warsaw.....	June 2.....	444,814	198	.....	.....	5	.....	.....	.....	3
Calcutta.....	May 12.....	433,219	236	53	.....	.....	.....	.....	.....	.....
Rome.....	April 28.....	388,300	172	.....	.....	.....	.....	3	.....	3
Palermo.....	June 9.....	250,000	81	.....	.....	.....	.....	1	5	1
Genoa.....	June 16.....	179,416	73	.....	.....	2	3	.....	.....	1
Trieste.....	June 9.....	154,500	90	.....	.....	5	.....	.....	.....	6
Toronto.....	June 23.....	130,000	35	.....	.....	.....	.....	.....	1	.....
Stuttgart.....	June 16.....	125,510	42	.....	.....	.....	.....	.....	.....	.....
Bremen.....	June 9.....	122,000	58	.....	.....	.....	.....	.....	.....	1
Havre.....	June 9.....	112,074	71	.....	.....	4	.....	5	2	.....
Pernambuco.....	May 29.....	110,000	98	.....	1	.....	.....	4	.....	.....
Barmen.....	June 9.....	109,000	51	.....	.....	.....	.....	.....	.....	2
Leghorn.....	June 17.....	101,718	35	.....	.....	.....	.....	.....	.....	.....
Rheims.....	June 2.....	97,903	59	.....	.....	1	.....	2	.....	1
Cadiz.....	June 16.....	65,028	53	.....	.....	.....	.....	.....	.....	.....
Merida.....	June 18.....	48,800	32	.....	.....	.....	.....	2	.....	.....
Cienfuegos.....	June 18.....	40,573	20	.....	.....	1	.....	.....	.....	.....
Gibraltar.....	June 9.....	23,631	5	.....	.....	.....	.....	.....	.....	.....
Cardenas.....	June 21.....	22,000	.....	.....	.....	.....	.....	.....	.....	.....
Sagua la Grande.....	June 16.....	15,605	16	.....	.....	2	.....	.....	.....	.....
Bermuda.....	June 27.....	15,260	.....	.....	.....	.....	.....	.....	.....	.....
Cartagena.....	June 2.....	13,000	8	.....	.....	.....	.....	.....	.....	.....
Matamoras.....	June 16.....	12,000	8	.....	.....	.....	.....	.....	.....	.....
Nassau, N. P.....	June 16.....	12,000	.....	.....	.....	.....	.....	.....	.....	.....
Laguayra.....	June 16.....	7,428	5	.....	.....	.....	.....	.....	.....	.....
Turk's Island.....	June 13.....	5,000	3	.....	.....	.....	.....	.....	.....	.....
Livingston.....	June 16.....	2,500	1	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

*Florida.—Yellow Fever.*—This Bureau is informed that about the middle of June yellow fever reappeared at Plant City, and there was one death therefrom, June 22. Another case in the vicinity, four miles and a half from Plant City, died on the 26th. There have been several mild cases in the village, which contains less than 300 inhabitants, but for the present trains will not stop at Plant City, and it is understood that mails will be delivered at Cork post office, five miles west of Plant City. In the mean time, by direction of the governor, the most active measures are being taken by the president of the county board of health, Dr. J. P. Wall. The board have promulgated the following regulation concerning the epidemic:

The Board of Health of Hillsborough County adopts and promulgates the following rules to prevent the spread of yellow fever at and from Plant City:

1st. Railroads passing through or into Plant City are prohibited from carrying passengers and baggage to or from Plant City, or from delivering or taking on freight, or transferring freight from the cars of one road to cars of another road at or near Plant City, except the delivery of the necessary supplies for the people living in the place.

Said railroad companies are also prohibited from delivering or taking on the United States mail at Plant City.

2d. All employés of the railroads living at or near Plant City must be acclimated to yellow fever by a previous attack of the disease; and such employés should be enjoined to keep away from the sick, if any, and aloof from all places suspected of being infected with yellow-fever poison.

Rule 3d. These rules are substituted for Rule 2 of the rules adopted and promulgated April 24, 1888.

The president of the county board of health states that—

In explanation of the foregoing stringent rules, it is necessary to say that the Board of Health of Hillsborough County believes Plant City to be infected with the poison, or germs of yellow fever; and inasmuch as expensive efforts to disinfect the place and stamp out the disease have failed, it is due to the public safety and welfare of the State to isolate the place and have it shunned as an infected place until such time as the board of health may deem it safe for people to go there. It is deemed absolutely necessary to suspend all business and cut off all communication with Plant City to prevent the risk of a widespread epidemic of yellow fever this summer. It is true that there is not much sickness there, and happily the large majority of the residents in the place are acclimated by a previous attack of the disease, but by visiting the place or commingling much with the people who still reside in Plant City, there is unquestionably great risk of spreading the disease. The summer is here, and the time for temporizing measures has passed. It is probable that Plant City will remain infected for some time, if not for the whole season, and hence the necessity for these stringent measures. Everybody is especially cautioned from being deceived by assertions of the disease being anything else but what the board of health has honestly pronounced it, yellow fever.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Philadelphia, Pa.....	June 16.....	1,016,758	353	.....	.....	3	.....	14	4	4
Philadelphia, Pa.....	June 30.....	1,016,758	536	.....	.....	2	.....	12	5	7
Baltimore, Md.....	June 30.....	431,879	248	.....	.....	.....	.....	4	.....	1
New Orleans, La.....	June 23.....	216,090	120	.....	.....	.....	.....	1	.....	4
Richmond, Va.....	June 30.....	63,600	61	.....	.....	.....	.....	1	.....	.....
Charleston, S. C.....	June 30.....	60,145	34	.....	.....	.....	.....	.....	.....	.....

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 28. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., July 13, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended July 13, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended June 23 corresponded to an annual rate of 15.5 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Nottingham, viz., 9.9, and the highest in Preston, viz., 24.3 a thousand. Small-pox caused 5 deaths in Sheffield, 2 in Preston, 1 in Manchester, and 1 in Leeds. Diphtheria caused 2 deaths in Leicester, 2 in Salford, and 2 in Leeds.

*London.*—One thousand one hundred and ninety deaths were registered during the week, including measles, 18; scarlet fever, 10; diphtheria, 15; whooping-cough, 33; enteric fever, 15; diarrhoea and dysentery, 18. The deaths from all causes corresponded to an annual rate of 14.5 a thousand. Diseases of the respiratory organs caused 184 deaths; different forms of violence, 63, and 10 suicides were registered. In greater London 1,486 deaths were registered, corresponding to an annual rate of 14.0 a thousand of the population. In the "outer ring" 11 deaths from whooping-cough and 9 from diphtheria were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended June 23 in the 16 principal town districts of Ireland was 21.0 a thousand of the population. The lowest rate was recorded in Lisburn, viz., 0.0, and the highest in Sligo, viz., 38.5 a thousand. In Dublin 140 deaths were registered, including whooping-cough, 4; enteric fever, 1; scarlet fever, 2; and dysentery, 1.

*Catania, Italy.*—Two hundred and thirty-six deaths were registered during the month of April, including small-pox, 18, and enteric fever, 10.



*Ceara, Brazil.*—One hundred and forty-eight deaths were registered during the month of May, including 4 from yellow fever.

*Ruatan, Honduras.*—The following is the report of the United States consul, under date of June 30: "Hemorrhagic pernicious fever, dangerous to all persons not acclimated. Four deaths during this month."

*Havana, Cuba.*—Four hundred and ninety-eight deaths were registered during the month of June, 1888, including yellow fever, 38; enteric fever, 11; pernicious fever, 7; malarial fever, 6; small-pox, 13; diphtheria, 1; and croup, 2. The sanitary inspector states that "30 of the deaths from yellow fever occurred in the military hospital, and among persons belonging to the army, which is composed entirely of soldiers sent out from Spain. Small-pox continues to diminish. Up to the present time this season it is not known that any vessel of the merchant marine in this harbor has been invaded by yellow fever."

*Santiago de Cuba.*—Malarial fevers and diarrhoea are reported prevalent. The military hospital is free from yellow fever, and no small-pox has been reported.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Calcutta.....	May 19.....	433,219	223	30						
Amsterdam.....	June 23.....	389,916	156							1
Rome.....	May 5.....	388,300	173			2		1		1
Munich.....	June 16.....	273,000	149					2	3	1
Genoa.....	June 23.....	179,448	68							1
Trieste.....	June 16.....	154,500	69		5					1
Toronto.....	June 30.....	130,000	27							1
Stuttgart.....	June 23.....	125,510	38							
Bremen.....	June 16.....	122,000	32							
Havre.....	June 12.....	112,074	60		2			5		
Pernambuco.....	June 16.....	110,000	82					3		
Bermen.....	June 16.....	109,000	34							1
Cienfuegos.....	June 25.....	40,573	20							
Curaçoa.....	June 23.....	25,000	6							
Vera Cruz.....	June 21.....	23,800	13							
Gibraltar.....	June 17.....	23,631	7							
Kingston, Can.....	June 29.....	16,216	3							
Antigua.....	June 17.....	15,847	18							
St. Thomas, W. I.....	June 22.....	15,000	7							
Matamoros.....	June 23.....	12,000	5							
Laguayra.....	June 23.....	7,428	5							
Livingston.....	June 30.....	2,500	4							

## UNITED STATES.

*San Francisco, Cal.*—Eleven cases of small-pox were reported during the month of June, but no deaths. Two deaths were reported up to July 4.

*Memphis, Tenn.*—The medical officer in charge of the Marine-Hospital Service reports one case of small-pox sent to the city pest-house July 9. The patient came direct from St. Louis the day before.

*Plant City, Fla.*—*Yellow Fever.*—The following information was received under date of July 10: "Only about thirty persons in the place who have not had fever. Five new cases reported to-day. Total population, 200. Most of the unacclimated moved out. Guard around place to prevent communication."

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Philadelphia, Pa.....	July 7 .....	1,016,758	423	.....	.....	3	.....	9	4	4
Baltimore, Md.....	July 7 .....	431,879	241	.....	.....	.....	.....	1	.....	.....
New Orleans, La.....	June 30.....	248,000	140	.....	.....	.....	.....	2	.....	6
Cleveland, Ohio.....	June 9.....	225,000	73	.....	.....	.....	.....	1	1	5
Cleveland, Ohio.....	June 16.....	225,000	67	.....	.....	.....	.....	3	.....	5
Charleston, S. C.....	July 7 .....	60,145	53	.....	.....	.....	.....	.....	.....	.....

JOHN B. HAMILTON,  
*Supervising Surgeon-General, Marine-Hospital Service.*

At the time of the meeting, the members of the Marine Hospital  
 Board of Directors were in session and to the only person July 9.  
 The meeting was held at the Marine Hospital.

The meeting was held at the Marine Hospital. The information was re-  
 ceived from the Marine Hospital. The information was re-  
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The meeting was held at the Marine Hospital. The information was re-  
 ceived from the Marine Hospital. The information was re-

MARINE HOSPITAL		MARINE HOSPITAL		MARINE HOSPITAL	
DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION
1900	...	1900	...	1900	...
1901	...	1901	...	1901	...
1902	...	1902	...	1902	...
1903	...	1903	...	1903	...
1904	...	1904	...	1904	...
1905	...	1905	...	1905	...
1906	...	1906	...	1906	...
1907	...	1907	...	1907	...
1908	...	1908	...	1908	...
1909	...	1909	...	1909	...
1910	...	1910	...	1910	...

THE MARINE HOSPITAL  
 The meeting was held at the Marine Hospital. The information was re-  
 ceived from the Marine Hospital. The information was re-

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
              { No. 29. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., July 20, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended July 20, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended June 30 corresponded to an annual rate of 15.9 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Huddersfield, viz., 12.6, and the highest in Preston, viz., 27.8 a thousand. Small-pox caused 3 deaths in Sheffield, 11 in Preston, and 1 in Hull. Diphtheria caused 3 deaths in Leeds.

*London.*—One thousand two hundred and thirty-eight deaths were registered during the week, including measles, 20; scarlet fever, 19; diphtheria, 28; whooping-cough, 27; enteric fever, 10; diarrhoea and dysentery, 36; cholera and choleraic diarrhoea, 2. The deaths from all causes corresponded to an annual rate of 15.1 a thousand. Diseases of the respiratory organs caused 156 deaths; different forms of violence, 64; and 9 suicides were registered. In greater London 1,530 deaths were registered, corresponding to an annual rate of 14.4 a thousand of the population. In the "outer ring" 4 deaths from whooping-cough, 3 from diphtheria, and 4 from scarlet fever were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended June 30 in the 16 principal town districts of Ireland was 23.0 a thousand of the population. The lowest rate was recorded in Lisburn, viz., 4.8, and the highest in Limerick, viz., 49.9 a thousand. In Dublin 168 deaths were registered, including measles, 1; typhus, 1; whooping-cough, 4; enteric fever, 2; scarlet fever, 2; diarrhoea, 2; and dysentery, 1.

*Marseilles, France.*—Eight hundred and thirty-one deaths were registered during the month of June, including small-pox, 8; enteric fever, 19; scarlet fever, 2; diphtheria and croup, 36; and measles, 43.

*Preston, England.*—The United States consul at Liverpool, in a dispatch dated June 23, states that "the number of cases of small-pox reported at Preston since the 10th is 72, and the number of deaths 10, making a total of 255 cases, 17 of which were fatal."

*Martinique.*—The United States consul, in his dispatch dated June 23, states that “in the last fortnight there have been no cases and no deaths from small-pox at Port de France, and in the previous week there has been only 1 case of small-pox in St. Pierre. During the past week there have been no cases and no deaths at either of the above-mentioned ports, and in the whole island there have been in the past week only 282 cases and 33 deaths. The indications are that the epidemic that has prevailed here since last October will speedily die out for lack of fuel to feed on, since almost all the cases now reported are from small hamlets in the interior of the island, which are just being visited by the scourge.”

*Havana, Cuba.*—Seventeen deaths from yellow fever are reported for the week ended July 7, 1888.

*Hong-Kong, China.*—The health officer at San Francisco, Cal., telegraphed under date of July 18: "Cholera reported epidemic at Hong-Kong." The State Department has cabled the consul at Hong-Kong to report the facts.

**MORTALITY TABLE, FOREIGN CITIES.**

[illegible]



## UNITED STATES.

*Ship Island Quarantine Station, Miss.*—The medical officer in charge of the Marine-Hospital Service reports that the captain and 4 men died of yellow fever on the Norwegian bark "Magnolia," on the voyage from Rio Janeiro. The vessel was bound for Pensacola, Fla., and is now undergoing quarantine at Ship Island, having been sent to that station by the Pensacola health authorities.

*Buffalo, N. Y., July 17.*—The medical officer in charge of the Marine-Hospital Service reports that "small-pox has made its appearance in the Polish quarter of this city. In all, 8 cases are reported. They have been removed to the city pest-house, and measures have been taken by the health officers to prevent a spread of the disease."

*Tampa, Fla., July 16.*—Two cases of yellow fever are reported, one convalescent and the other probably fatal. There are several cases at Manatee. On July 19 the governor of Florida made application to the Secretary of the Treasury for aid to the local health authorities in suppressing the disease, and the Secretary informed the governor that aid would be furnished through the Marine-Hospital Bureau. A house inspection at the villages named will be immediately commenced.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Philadelphia, Pa.....	July 14 .....	1,016,758	449	.....	.....	7	.....	13	1	6
Baltimore, Md.....	July 14 .....	431,879	246	.....	.....	.....	.....	1	1	1
San Francisco, Cal..	July 6 .....	300,000	127	.....	.....	2	.....	3	.....	3
New Orleans, La.....	July 7 .....	248,000	120	.....	.....	.....	.....	.....	.....	6
Pittsburgh, Pa.....	July 14 .....	230,000	97	.....	.....	.....	.....	1	.....	1
Cleveland, Ohio.....	June 23.....	225,000	70	.....	.....	.....	.....	.....	.....	4
Cleveland, Ohio.....	June 30.....	225,000	71	.....	.....	.....	.....	.....	.....	1
Washington, D. C....	July 14 .....	218,000	120	.....	.....	.....	.....	1	.....	1
Richmond, Va.....	July 14 .....	63,600	42	.....	.....	.....	.....	.....	.....	.....
Charleston, S. C.....	July 14 .....	60,145	50	.....	.....	.....	.....	1	.....	1
Mobile, Ala.....	July 7.....	29,132	22	.....	.....	.....	.....	.....	.....	.....
Mobile, Ala.....	July 14 .....	29,132	24	.....	.....	.....	.....	.....	.....	.....

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 30. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., July 27, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended July 27, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended July 7 corresponded to an annual rate of 15.0 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 9.1, and the highest in Preston, viz., 22.2 a thousand. Small-pox caused 7 deaths in Preston and 1 in Bradford.

*London.*—One thousand two hundred and eleven deaths were registered during the week, including measles, 23; scarlet fever, 10; diphtheria, 29; whooping-cough, 31; enteric fever, 7; diarrhœa and dysentery, 51; simple cholera and choleraic diarrhœa, 3. The deaths from all causes corresponded to an annual rate of 14.8 a thousand. In greater London 1,502 deaths were registered, corresponding to an annual rate of 14.2 a thousand of the population. In the "outer ring" 6 deaths from whooping-cough and 6 from diphtheria were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended July 7 in the 16 principal town districts of Ireland was 19.2 a thousand of the population. The lowest rate was recorded in Drogheda, viz., 0.0, and the highest in Wexford, viz., 29.9 a thousand. In Dublin 137 deaths were registered, including measles, 3; whooping-cough, 6; enteric fever, 6; scarlet fever, 2; and erysipelas, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week ended July 7 corresponded to an annual rate of 16.2 a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Greenock, viz., 9.5, and the highest in Glasgow, viz., 18.9 a thousand. The aggregate number of deaths registered from all causes was 410, including measles, 7; scarlet fever, 3; diphtheria, 7; whooping-cough, 5; fever, 5; and diarrhœa, 10.



## UNITED STATES.

*Delaware Breakwater Quarantine Station.*—The American brig "Ten-riffe," from Havana, arrived July 22, with 2 cases of yellow fever on board. One man died during the passage. The sick have been admitted to hospital, and vessel placed in quarantine. Since the admission of the first 2 cases, the captain, who had remained on board, was taken sick, and at once removed to hospital.

*Tampa, Fla.*—The following is an extract from a telegram received from the president of the board of health, Dr. J. P. Wall, under date of July 20: "Not much fever in this county. Six cases in and around Plant City. No spread from cases here. All precautions taken. Guards are wanted for Plant City and Manatee village. Not over 150 people in each. Both places are infected *foci*. No new cases reported in Manatee."

This Bureau has authorized the employment of necessary guards to aid the local authorities, as recommended by Dr. Wall.

July 24 Dr. Wall reports: "Began inspection Tampa and ordered inspection Plant City yesterday. Two cases in Plant City. None here."

July 25: "House-to-house inspection in Tampa will be finished to-morrow. No sickness."

July 26: "Inspection here completed. No sickness here. Two cases at Plant City. No new ones for several days. Dr. Murray reports no new ones at Manatee."

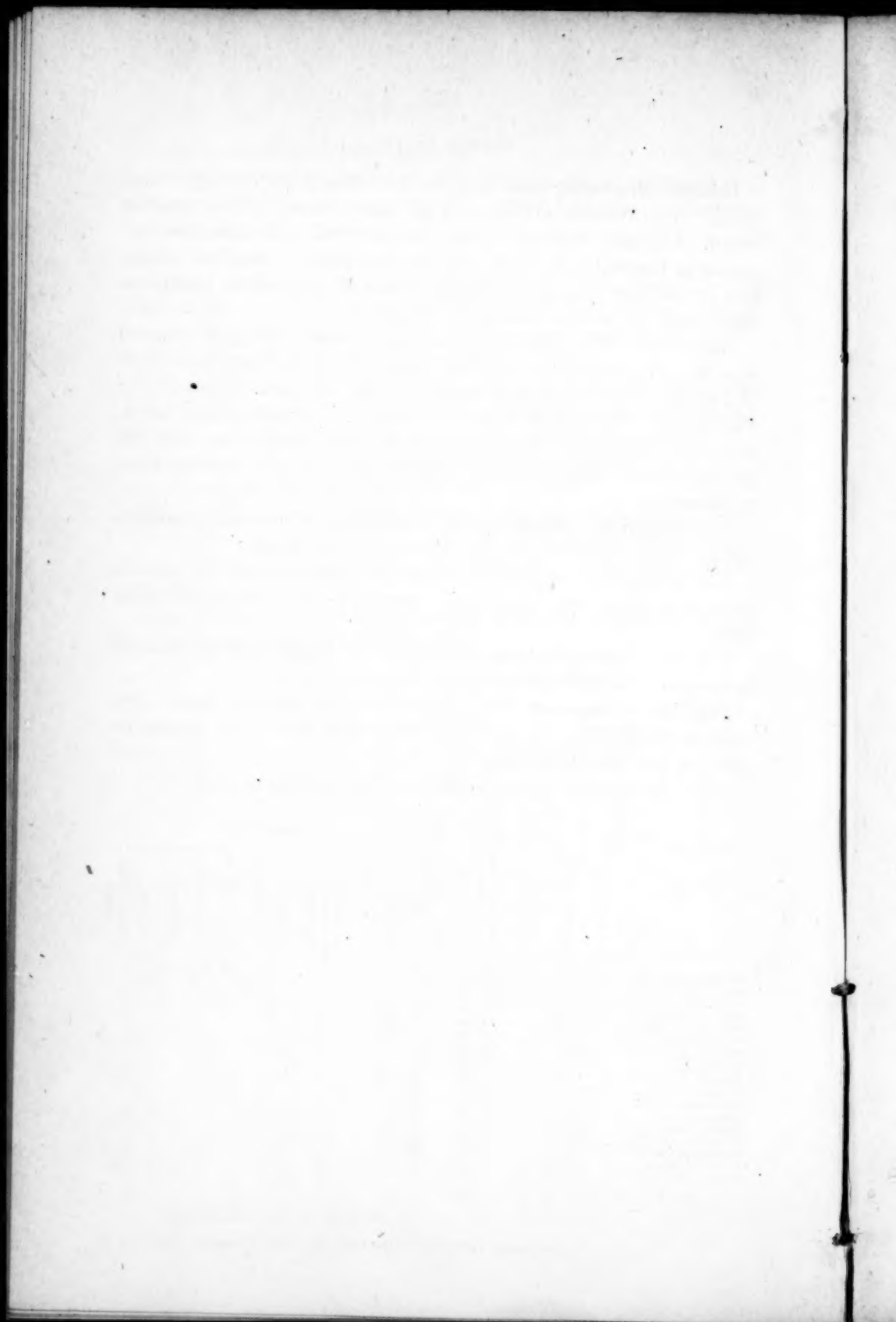
MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
Philadelphia, Pa.....	July 21....	1,016,758	456	.....	.....	3	.....	.....	17	1	3	.....	2
Baltimore, Md.....	July 21....	431,879	261	.....	.....	.....	.....	.....	.....	2	1	.....	3
San Francisco, Cal.....	July 13....	300,000	109	.....	.....	.....	.....	.....	5	.....	.....	.....	.....
San Francisco, Cal.....	July 20....	300,000	129	.....	.....	.....	.....	.....	4	.....	12	.....	.....
Cincinnati, Ohio.....	July 21....	255,139	117	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
New Orleans, La.....	July 14....	248,000	133	.....	.....	.....	.....	.....	1	.....	3	.....	.....
Pittsburgh, Pa.....	July 21....	230,000	86	.....	.....	.....	.....	.....	1	2	4	1	2
Washington, D. C.....	July 21....	225,000	118	.....	.....	.....	.....	.....	3	.....	.....	.....	4
Lowell, Mass.....	July 21....	72,000	34	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Richmond, Va.....	July 21....	63,600	44	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charleston, S. C.....	July 21....	60,145	34	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Reading, Pa.....	July 23....	60,000	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mobile, Ala.....	July 21....	40,000	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wheeling, W. Va.....	July 21....	35,000	16	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Youngstown, Ohio.....	July 21....	25,000	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Newton, Mass.....	July 21....	21,105	12	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Schenectady, N. Y.....	July 22....	20,000	6	.....	.....	.....	.....	.....	1	.....	.....	.....	.....

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*





## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 31. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., August 3, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended August 3, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended July 14 corresponded to an annual rate of 15.7 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bristol, viz., 10.6, and the highest in Bolton, viz., 28.5 a thousand. Small-pox caused 6 deaths in Preston, 1 in Bolton, 2 in Sheffield, and 1 in Leeds. Diphtheria caused 2 deaths in Manchester.

*London.*—One thousand two hundred and eighty-eight deaths were registered during the week, including small-pox, 1; measles, 26; scarlet fever, 18; diphtheria, 24; whooping-cough, 32; enteric fever, 12; diarrhoea and dysentery, 72; simple cholera and choleraic diarrhoea, 3. Diseases of the respiratory organs caused 164 deaths; different forms of violence, 56; and 8 suicides were registered. The deaths from all causes corresponded to an annual rate of 15.7 a thousand. In greater London 1,563 deaths were registered, corresponding to an annual rate of 14.8 a thousand of the population. In the "outer ring" 6 deaths from whooping-cough and 13 from diphtheria were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended July 14 in the 16 principal town districts of Ireland was 19.8 a thousand of the population. The lowest rate was recorded in Kilkenny, viz., 4.2, and the highest in Drogheda, viz., 38.1 a thousand. In Dublin 153 deaths were registered, including whooping-cough, 8; enteric fever, 1; scarlet fever, 4; typhus, 1; and diarrhoea 6.

*Scotland.*—The deaths registered in 8 principal towns during the week ended July 14 corresponded to an annual rate of 16.1 a thousand of

the population, which is estimated at 1,314,274. The lowest mortality was recorded in Perth, viz., 9.6, and the highest in Aberdeen, viz. 19.2 a thousand. The aggregate number of deaths registered from all causes was 406, including measles, 3; scarlet fever, 1; diphtheria, 5; whooping-cough, 8; fever, 3; and diarrhœa, 8.

*Martinique.*—The United States consul, in his dispatch dated July 2, states that “the health of St. Pierre and Fort de France continues excellent. During the week ending June 30, there were officially reported in the whole island 325 new cases of small-pox, and 28 deaths. The commune of Gros Morne, about 20 miles from St. Pierre, had 202 of these new cases and 4 deaths.”

July 7: "During the past week there are officially reported 191 cases and 27 deaths from small-pox. There were no new cases or deaths in Fort de France, but there were 2 new cases reported in St. Pierre, with no deaths."

*Havana, Cuba.*—Twenty-one deaths from yellow fever and 4 from small-pox were registered during the week ended July 21.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Glasgow .....	July 14.....	545,678	165					1		2
Warsaw .....	July 7.....	444,814	217			6			8	4
Calcutta .....	June 16.....	433,219	202	11						
Amsterdam .....	July 14.....	389,916	130					1		2
Rome .....	May 26.....	388,300	146					2		1
Copenhagen .....	July 10.....	300,000	95						5	5
Munich .....	July 7.....	275,000	169					1	5	3
Edinburgh .....	July 7.....	262,733	85				1		1	
Palermo .....	July 14.....	250,000	98					1		
Genoa .....	July 14.....	179,570	71			2				
Leipsic .....	July 14.....	170,000	77					1		4
Trieste .....	July 7.....	154,500	62			4				1
Toronto .....	July 21.....	130,000	25							
Stuttgart .....	July 14.....	125,510	43							
Bremen .....	July 7.....	122,000	29							1
Havre .....	July 14.....	112,074	67			4		3		
Barmen .....	July 7.....	109,000	41							
Leghorn .....	July 15.....	94,423	37							
Leith .....	July 7.....	74,320	20							
Cadiz .....	July 14.....	65,028	41							
Guayaquil .....	June 3.....	30,000	68		5	1				
Guayaquil .....	June 10.....	30,000	63		2					
Curaçoa .....	July 20.....	25,000	5							
Vera Cruz .....	July 19.....	23,800	16							
Kingston, Canada .....	July 27.....	16,216	4							
Sagua la Grande .....	July 14.....	15,605	7							
Cartagena, Colom'a .....	July 7.....	13,000	8							
Matamoros .....	July 14.....	12,000	13							
Laguayra .....	July 14.....	7,428	3							
Livingston .....	July 21.....	2,500	3							

## UNITED STATES.

*San Francisco, Cal.*—The secretary of the health department informed this Bureau, under date of July 23, that "the health officer to-day received the following dispatch from Hong-Kong: 'Cholera epidemic terminated July 9.' Every precaution will be taken by the board of health to prevent the landing of infected persons or baggage from China at this port."

*Nashville, Tenn.*—The secretary of the State board of health reported 48 cases of small-pox in Tennessee from its first appearance this year to July 24. The cases were distributed as follows: Jackson, 1; Memphis, 26; Shelby County, 1; Nashville, 12; Obion County, near Union City, 5; Rutherford County, 3. The secretary also states: "Precautions taken promptly, viz., isolation, vaccination, and disinfection. Think we have the disease under control now."

*Buffalo, N. Y.*—The medical officer in charge of the Marine-Hospital Service reported under date of July 30 as follows: "Since my last report in reference to small-pox in this city, 3 new cases have occurred in the same district. All have been taken to the city pest-house. The health officers have vaccinated 16,000 people gratuitously in the Polish quarter. There have been no deaths thus far."

*Delaware Breakwater Quarantine Station.*—One of the seamen admitted to hospital from the brig "Teneriffe," suffering from yellow fever, died in the hospital on the 27th instant. He had black vomit. The captain and the other seaman are convalescent. The vessel has been cleansed and fumigated, and is now being held in quarantine for further observation.

*Tampa, Fla.*—*Yellow fever.*—Dr. J. P. Wall telegraphs as follows:

July 29: "No new cases anywhere, and no sick."

July 31: "One case at Plant City."

Instructions were given Dr. Wall to perform thorough disinfection of all dwellings and infected things in Tampa and Plant City, and similar instructions were sent to Surgeon Murray, at Manatee.

*Manatee, Fla., Aug. 1.*—The first two suspicious cases occurred last evening. Two others this morning. Manatee village guarded by 25 men. Suspicious houses have been disinfected. Probably 100 persons unacclimated, and liable to take the fever. No panic among the people. Inspection completed on the 27th July.

August 2: Three new cases reported.

*Sanford, Fla.*—The death of a baggage-master has been reported as of a suspicious character, and although the local authorities deny the

existence of any yellow fever, the circumstances will be investigated by Passed Assistant Surgeon John Guit ras.

*Jackson, Mich.*—Health Officer Mitchell reports that diphtheria prevails as an epidemic.

The following is the quarantine act which passed the Senate May 3, 1888, passed the House July 23, 1888, and was approved by the President August 2, 1888. Its provisions go into immediate effect, and the quarantine buildings will be erected as soon as practicable. Steps will be immediately taken to secure sites for the quarantines not now on Government land :

AN ACT to perfect the quarantine service of the United States.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That whenever any person shall trespass upon the grounds belonging to any quarantine reservation, or whenever any person, master, pilot, or owner of a vessel entering any port of the United States, shall so enter in violation of section one of the act entitled "An act to prevent the introduction of contagious or infectious diseases into the United States," approved April twenty-ninth, eighteen hundred and seventy-eight, or in violation of the quarantine regulations framed under said act, such person, trespassing, or such master, pilot, or other person in command of a vessel shall, upon conviction thereof, pay a fine of not more than three hundred dollars, or be sentenced to imprisonment for a period of not more than thirty days, or shall be punished by both fine and imprisonment, at the discretion of the court. And it shall be the duty of the United States attorney in the district where the misdemeanor shall have been committed to take immediate cognizance of the offense, upon report made to him by any medical officer of the Marine-Hospital Service, or by any officer of the customs service, or by any State officer acting under authority of section five of said act.

SEC. 2. That as soon after the passage of this act as practicable, the Secretary of the Treasury shall cause to be established, in addition to the quarantine established by the act approved March fifth, eighteen hundred and eighty-eight, quarantine stations, as follows : One at the mouth of the Delaware Bay ; one near Cape Charles, at the entrance of the Chesapeake Bay ; one on the Georgia coast ; one at or near Key West ; one in San Diego Harbor ; one in San Francisco Harbor ; and one at or near Port Townsend, at the entrance to Puget Sound ; and the said quarantine stations when so established shall be conducted by the Marine-Hospital Service under regulations framed in accordance with the act of April twenty-ninth, eighteen hundred and seventy-eight.

SEC. 3. That there are appropriated for the purposes of this act the following sums, out of any money in the Treasury not otherwise appropriated, for the construction, equipment, and necessary expenses of maintaining the same for the fiscal year ending June thirtieth, eighteen hundred and eighty-nine :

For the Delaware Breakwater quarantine : Construction of disinfect-



ing machinery, steam-tug, warehouse, officers' quarters, and expenses of maintenance for the fiscal year eighteen hundred and eighty-nine, seventy-five thousand dollars.

For the quarantine station near Cape Charles, Virginia : For the purchase of site, construction of wharf, repair of present hospital buildings and officers' quarters, disinfecting machinery, steam-tug, expenses of maintenance for the year eighteen hundred and eighty-nine, one hundred and twelve thousand dollars.

For the South Atlantic Station (Sapelo Sound) : Construction of disinfecting machinery, warehouse, wharf, small boats, and expenses of maintenance for the year eighteen hundred and eighty-nine, thirty-eight thousand five hundred dollars.

For the quarantine near Key West : Purchase of site, construction of disinfecting machinery, warehouse, small boats, steam-tug, hospital buildings and officers' quarters, expenses of maintenance for the year eighteen hundred and eighty-nine, eighty-eight thousand dollars.

For the Gulf quarantine (formerly Ship Island), provided for by the act of March fifth, eighteen hundred and eighty-eight, in addition to the amount appropriated by the act approved March fifth, eighteen hundred and eighty-eight : For the expenses for the year ending June thirtieth, eighteen hundred and eighty-nine, fifteen thousand dollars.

Quarantine station, San Diego Harbor, California : For the purchase of site and the construction of disinfecting machinery, warehouse, small boats, hospital buildings, officers' quarters, and for expenses of maintenance for eighteen hundred and eighty-nine, fifty-five thousand five hundred dollars.

For the quarantine station at San Francisco, California : Hospital buildings and officers' quarters, disinfecting machinery, warehouse and wharf, steam-tug, small boats, expenses for the fiscal year eighteen hundred and eighty-nine, one hundred and three thousand dollars.

For the quarantine station at Port Townsend : For the purchase of site, construction of disinfecting machinery, warehouse, small boats, hospital buildings, and officers' quarters, for expenses of maintenance for the fiscal year eighteen hundred and eighty-nine, fifty-five thousand five hundred dollars.

Approved August 2, 1888.

## MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Varicoid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
New York, N. Y.	July 28	1,529,444	1,002							13	19	35	23
Philadelphia, Pa.	July 28	1,016,758	459			3				23	12	1	1
Chicago, Ill.	July 28	800,000	399							7	7	5	8
Brooklyn, N. Y.	July 21	793,960	512								8	19	1
Baltimore, Md.	July 28	431,879	219							2	2	1	2
Boston, Mass.	July 28	415,000	240							4	4	7	
Cincinnati, Ohio.	July 28	255,139	115							2	2	2	
New Orleans, La.	July 21	248,000	125							1		3	
Pittsburgh, Pa.	July 31	230,000	101							10			3
Washington, D. C.	July 28	225,000	103							3	1	2	
Detroit, Mich.	July 28	220,000	93										1
Milwaukee, Wis.	July 28	195,000	64						1		1	1	
Minneapolis, Minn.	July 27	180,000	91							1		1	
Kansas City, Mo.	July 28	180,000	53							9			
St. Paul, Minn.	July 28	175,000	46							4			
Rochester, N. Y.	July 27	120,000	62									1	
Denver, Colo.	July 28	96,000	27							3		5	
Toledo, Ohio	July 28	80,000	35								1		
Fall River, Mass.	July 28	65,000	56								1	1	1
Cambridge, Mass.	July 28	64,079	40										
Charleston, S. C.	July 28	60,145	40									1	
Reading, Pa.	July 30	60,000	33							1			
Wilmington, Del.	July 28	57,000	32										
Evansville, Ind.	July 26	53,000	27									1	
Savannah, Ga.	July 27	52,827	17										1
Lynn, Mass.	July 28	50,000	9									1	
Manchester, N. H.	July 28	41,000	24										
Galveston, Tex.	July 20	40,000	16										
Mobile, Ala.	July 28	40,000	16										
Portland, Me.	July 28	40,000											
Springfield, Mass.	July 28	40,000	26									2	
Fort Wayne, Ind.	July 30	39,000	15										
Wheeling, W. Va.	July 28	35,000	12							1			
East Saginaw, Mich.	July 28	33,800	7										
New Bedford, Mass.	July 28	26,845	18										
Auburn, N. Y.	July 28	25,000	6										
Haverhill, Mass.	July 28	25,000	11										
Jackson, Mich.	July 28	22,500	8										
Newton, Mass.	July 28	21,105	6									1	
Newport, R. I.	July 27	20,000	8									1	
Schenectady, N. Y.	July 30	20,000	8							1		1	

NOTE TO HEALTH OFFICERS.—Several of the reports received cannot be given for the reason that the name of the city was not stated.

JOHN B. HAMILTON,  
Supervising Surgeon-General, Marine-Hospital Service.

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 32. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., August 10, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended August 10, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended July 21 corresponded to an annual rate of 16.0 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 12.2, and the highest in Preston, viz., 20.2 a thousand. Small-pox caused 1 death in Preston, 1 in Bristol, 2 in Sheffield, and 1 in Hull. Diphtheria caused 3 deaths in Manchester.

*London.*—One thousand two hundred and ninety-seven deaths were registered during the week, including small-pox, 1; measles, 25; scarlet fever, 14; diphtheria, 15; whooping-cough, 33; enteric fever, 8; diarrhœa and dysentery, 62; choleraic diarrhœa, 2. Diseases of the respiratory organs caused 166 deaths; different forms of violence, 54; and 5 suicides were registered. The deaths from all causes corresponded to an annual rate of 15.8 a thousand. In greater London 1,589 deaths were registered, corresponding to an annual rate of 15.0 a thousand of the population. In the "outer ring" 11 deaths from whooping-cough and 7 from diphtheria were registered.

*Scotland.*—The deaths registered in 8 principal towns during the week ended July 21 corresponded to an annual rate of 18.4 a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Dundee, viz., 11.3, and the highest in Glasgow, viz., 23.0 a thousand. The aggregate number of deaths registered from all causes was 466, including measles, 9; scarlet fever, 2; diphtheria, 4; whooping-cough, 5; fever, 3; and diarrhœa, 12.

*Catania, Italy.*—Three hundred and nineteen deaths were registered

during the month of May, 1888, including small-pox, 53, and enteric fever, 10.

*Havana, Cuba.*—Five hundred and eighty-six deaths were registered during the month of July, 1888, including yellow fever, 79; enteric fever, 15; pernicious fever, 22; small-pox, 6; and measles, 1. The sanitary inspector states that 55 of the deaths from yellow fever occurred in the military hospital, the remainder among civilians in the city. Merchant vessels at wharves on the Havana side of the harbor are being invaded by yellow fever.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Glasgow .....	July 21.....	545,678	233	.....	.....	.....	.....	2	1	1
Warsaw .....	July 14.....	444,814	223	.....	.....	3	.....	.....	4	3
Calcutta .....	June 23.....	433,219	162	8	.....	.....	.....	.....	.....	.....
Amsterdam .....	July 21.....	389,916	153	.....	.....	.....	.....	.....	.....	3
Rome .....	June 2.....	388,300	167	.....	.....	.....	.....	2	.....	1
Genoa .....	July 21.....	179,572	93	.....	.....	1	1	.....	.....	.....
Trinidad .....	July 7.....	178,270	36	.....	.....	.....	.....	.....	.....	.....
Trieste .....	July 14.....	154,500	83	.....	.....	7	.....	.....	1	2
Toronto .....	July 30.....	130,000	34	.....	.....	.....	.....	.....	.....	1
Stuttgart .....	July 21.....	123,510	37	.....	.....	.....	.....	.....	.....	.....
Bremen .....	July 14.....	122,000	32	.....	.....	.....	.....	.....	.....	.....
Barmen .....	July 14.....	109,000	32	.....	.....	.....	1	.....	.....	.....
Mayence .....	June 30.....	65,802	24	.....	.....	.....	.....	.....	.....	.....
Cadiz .....	July 21.....	65,028	43	.....	.....	.....	.....	.....	.....	.....
Merida .....	July 17.....	48,000	30	.....	.....	.....	.....	.....	.....	.....
Santiago de Cuba .....	July 14.....	40,000	44	.....	9	.....	.....	.....	.....	.....
Callao .....	July 7.....	34,000	.....	.....	.....	.....	.....	.....	.....	.....
Guayaquil .....	July 1.....	30,000	67	.....	4	.....	.....	.....	.....	.....
Guayaquil .....	July 8.....	30,000	65	.....	.....	.....	.....	.....	.....	.....
Vera Cruz .....	July 26.....	23,800	16	.....	.....	.....	.....	.....	.....	.....
Gibraltar .....	July 15.....	23,631	11	.....	.....	.....	.....	1	.....	1
Sagua la Grande .....	July 21.....	15,605	7	.....	.....	.....	.....	.....	.....	.....
St. Thomas .....	July 6.....	15,000	8	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

*Nashville, Tenn.*—The health-officer stated in his report dated August 4: "We had an outbreak of small-pox July 3, 1888. Total number of cases of variola and varioloid, 11 (sent to pest-house beyond city limits). Deaths, 2. Last case occurred July 21. Consider it stamped out."

*Wheeling, W. Va.*—The health-officer, in his report dated August 4, stated that "there is 1 case of small-pox in Springtown, Ohio, a river village 50 miles below here, opposite Sisterville, W. Va. A rigid quarantine exists."

*Delaware Breakwater.*—The brig "Teneriffe" was discharged from quarantine on the 7th instant. The captain and seaman remaining

under treatment for yellow fever at last report have recovered and returned to vessel.

*Tampa, Fla.*—Dr. J. P. Wall telegraphed as follows:

August 3: Fumigation going on at Plant City. No new cases. Dr. Murray reports no change at Manatee since yesterday.

August 6: Was at Plant City to-day. No sick except case reported convalescent. Fumigation going on. Employed two more guards, as some parties entered at night were captured and put in quarantine under guard. All right here.

August 9: Six suspicious cases have appeared here, all "indigenous;" diagnosis not positive yet.

*Manatee, Fla.*—Surgeon R. D. Murray telegraphed:

August 4: Two cases forty-eight hours. No deaths. Twenty persons sent to pine woods. Thirty indigent colored people ask for subsistence.

To which the following reply was sent:

August 5: Furnish subsistence to all destitute persons necessarily detained at quarantine line, but pass them outside your lines as soon as detention period is passed. Do not ration people determined to stay in Manatee.

*Sanford, Fla.*—Passed Assistant Surgeon John Guitéras, U. S. M.-H. S., telegraphed:

August 2: No cases of fever at present in city, but the suspected case required further investigation, which will be completed to-morrow.

August 3: Case was probably not yellow fever. There appears to be no fever here, but will have to investigate further.

Under date of August 5, Dr. Guitéras wrote as follows:

I exhumed the body of the suspected case, and performed to-day a post-mortem examination. The man died of abscess of the liver, which opened into the œsophagus, thus giving rise to hæmorrhagic vomiting. I shall write out a full report of the case, which proves to be a very interesting one. I have received all the assistance I could desire from Drs. Wyly and Caldwell. I found it necessary to make the autopsy; otherwise I should have been forced to report that I did not know what had been the cause of death.

*Jacksonville, Fla.*—A report having been received of the existence of yellow fever in Jacksonville, Dr. Guitéras was directed to proceed immediately to that point and investigate and report facts. The following are his reports:

August 7: I visited to-day McCormack at the Sand Hills, where he has been carefully isolated. The case is one of yellow fever, contracted in Plant City and developed in Jacksonville. Patient convalescent. Other boarders in same house thoroughly isolated.

August 8: Two cases of yellow fever discovered this morning. One of them had been in city six days from Orlando when taken sick. The other had not been out of city. Other 2 suspicious cases traceable to same store where the others taken sick. Health authorities are taking active steps in the matter. All cases will be sent to the Sand Hill Hospital. I fear it is the beginning of an outbreak.



There is a circumscribed focus of infection in one block in the city. Two more cases discovered, traceable to same center. County board of health very active in isolating all 4 patients, and some suspicious sent to Sand Hills. The board will communicate with you to-night, I believe.

August 9: Since yesterday evening 2 cases found at the city hospital, in the outskirts of town. They have been isolated there; 1 of them can be connected with the original focus. Three other cases discovered to-day. Total, 5 new cases. We are beginning to lose connection with the original focus. The last 3 cases will probably be sent to Sand Hills, but the importance of isolation is evidently diminishing. Infected localities have been closed up, and measures for disinfection have been taken.

The following has been received from Dr. Neal Mitchell, president of the board of health, Jacksonville:

We shall enforce thorough isolation.

August 9: All infected bedding and clothing burned. Five new cases to-day; disease assuming epidemic form.

*Manatee, Fla.*—Surgeon Murray telegraphed:

August 8: Four new cases. Thirteen in total. One fatal case in Palmetto, across the river. No other case known or suspected.

*St. Mark's, Fla.*—It is reported that refugees from Manatee are landing at St. Mark's. The collector of customs at Cedar Keys has been directed to investigate the matter. The revenue cutter on this station is disabled and undergoing repairs.

*Apalachicola, Fla.*—The collector of customs and the president of the board of health telegraphed August 9:

Answering your message, bark "Joe Read" is here from Havana; foul bill; master says short-handed. Refused obey orders board of health to proceed to Ship Island. Crew refused duty; two men short. Master asks for cutter tow him to Ship Island. Have no facilities for treatment if any sickness. Please answer and act at once.

To which the following reply was made:

August 9: May hire two able seamen and pilot, if necessary; but vessel must go to Ship Island at once.

Passed Assistant Surgeon Guitéras has been ordered to open inspection station at Way Cross, Ga., and upon being relieved by Passed Assistant Surgeon Urquhart will open additional inspection stations at Du Pont, Ga., and Chattahoochee, Fla. All baggage passing through these stations from places in Florida will have to be fumigated before being allowed to come further north or west.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—										
				Cholera.	Yellow fever.	Small-pox.	Varioloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Aug. 4.	1,530,316	814							11	22	27	17	19
Chicago, Ill.	Aug. 6.	802,600	441							10		5	5	7
Brooklyn, N. Y.	Aug. 4.	793,960	409							1	6	13	2	6
Baltimore, Md.	Aug. 4.	431,879	235							7			2	1
San Francisco, Cal.	July 27.	300,000	111							2				
Cincinnati, Ohio.	Aug. 4.	255,139	152							2				
New Orleans, La.	July 28.	248,000	145							1		11		2
Buffalo, N. Y.	Aug. 4.	230,000	162							1		3		1
Pittsburgh, Pa.	Aug. 4.	230,000	122			1				6	3	1	1	4
Washington, D. C.	Aug. 4.	225,000	130							8		3		10
Louisville, Ky.	Aug. 4.	200,000	57							3				
Kansas City, Mo.	Aug. 4.	180,000	60							4				
Minneapolis, Minn.	Aug. 4.	180,000	69							2				
Rochester, N. Y.	Aug. 4.	120,000	64									1		
Richmond, Va.	Aug. 4.	100,000	49							1				
New Haven, Conn.	Aug. 4.	82,000	24											
Toledo, Ohio.	Aug. 4.	80,000	37							1				
Lowell, Mass.	Aug. 6.	72,000	57							1				
Nashville, Tenn.	Aug. 4.	65,153	28											
Fall River, Mass.	Aug. 4.	65,000	41											
Evansville, Ind.	Aug. 2.	53,000	35											
Savannah, Ga.	Aug. 3.	52,827	17											
Lynn, Mass.	Aug. 6.	50,000	20							1				
Manchester, N. H.	Aug. 4.	41,000	11											
Galveston, Tex.	July 27.	40,000	12											
Portland, Me.	Aug. 4.	40,000	9											
Mobile, Ala.	Aug. 4.	40,000	16											
Fort Wayne, Ind.	Aug. 5.	39,000	17											
Wheeling, W. Va.	Aug. 4.	35,000	11											
Burlington, Iowa.	Aug. 1.	30,166	6											
Davenport, Iowa.	July 28.	30,082	8											
Altoona, Pa.	July 28.	29,546	11							2				
Yonkers, N. Y.	Aug. 4.	27,500	8											
New Bedford, Mass.	Aug. 4.	26,845	15								1	1		
Auburn, N. Y.	Aug. 4.	26,000	10											
Haverhill, Mass.	Aug. 4.	25,000	13											
Newton, Mass.	Aug. 4.	21,105	8									1		1
Newport, R. I.	Aug. 2.	20,466	5											
Schenectady, N. Y.	Aug. 6.	20,000	9											
Jackson, Mich.	Aug. 4.	19,100	6									1		

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 33. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., August 17, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended August 17, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended July 28 corresponded to an annual rate of 15.8 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Derby, viz., 8.1, and the highest in Halifax, viz., 25.4 a thousand. Small-pox caused 3 deaths in Preston. Diphtheria caused 4 deaths in Manchester, 4 in Liverpool, and 2 in Sunderland.

During the quarter ended June 30, 124,943 deaths were registered, corresponding to an annual rate of 17.5 a thousand, including small-pox, 310; diphtheria, 1,016; fever, 1,088; scarlet fever, 1,150; measles, 1,255; diarrhœa, 1,511; and whooping-cough, 3,059.

*London.*—One thousand three hundred and eight deaths were registered during the week, including small-pox, 1; measles, 40; scarlet fever, 23; diphtheria, 21; whooping-cough, 30; enteric fever, 15; diarrhœa and dysentery, 89; simple cholera and choleraic diarrhœa, 4. Diseases of the respiratory organs caused 160 deaths; different forms of violence, 63; and 12 suicides were registered. The deaths from all causes corresponded to an annual rate of 15.9 a thousand. In greater London 1,570 deaths were registered, corresponding to an annual rate of 14.8 a thousand of the population. In the "outer ring" 11 deaths from whooping-cough and 7 from diarrhœa were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended July 28 in the 16 principal town districts of Ireland was 18.4 a thousand of the population. The lowest rate was recorded in Armagh, viz., 5.2, and the highest in Kilkenny,

viz., 29.6 a thousand. In Dublin 122 deaths were registered, including whooping-cough, 1; enteric fever, 1; scarlet fever, 4; typhus, 1; and dysentery, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week ended July 28 corresponded to an annual rate of 15.3 a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Aberdeen, viz., 10.9, and the highest in Paisley, viz., 24.5 a thousand. The aggregate number of deaths registered from all causes was 387, including measles, 5; scarlet fever, 3; diphtheria, 3; whooping-cough, 6; fever, 3; and diarrhoea, 21.

*Cádiz, Spain.*—A dispatch from the United States consul dated July 19 contains a list of ports comprehended under the sanitary rules from which all arrivals at those of the Spanish peninsula are subject to rigorous quarantine, including the Balearic Isles and Cento.

Americas, all ports of the Gulf of Mexico; all ports of the Antilles; all of La Guayra and Costa Firme; on account of yellow fever vessels leaving those ports between May 1 and September 30; Tampa, any time; yellow fever.

Asia, Persian Gulf; Levantine pest.

Cochin China, Saigon, China, all the empire except Emny; cholera.

Philippines, Mindanao; Anam, Tonquin; cholera.

The only changes which have been made since January 28 last are in the Americas, being the ports of Brazil and all those of Chili omitted, and that of Guayaquil, in Ecuador, added by royal order of May 12 last, on account of yellow fever.

*Preston, England.*—The United States consul at Liverpool, in his dispatch dated July 24, in reference to small-pox at Preston, states that "there is good reason to believe that the epidemic is now dying out, there having been a considerable diminution in the number reported."

*Santiago de Cuba.*—The sanitary inspector reports for the week ended July 21, 9 cases and 7 deaths from yellow fever, all at the military hospital. "No cases of it have appeared so far in the town or harbor. Measles seems to be epidemic, but causes no deaths." For the week ended July 28 there are reported 7 cases and 4 deaths from yellow fever, and 2 from diphtheria.

*Havana, Cuba.*—Thirty deaths from yellow fever and 1 from small-pox are reported for the week ended August 4. An increase over last week of 13 deaths from yellow fever.

*Montevideo.*—Four hundred and twenty-one deaths were registered during the month of May, 1888, including small-pox, 50; and enteric and typhus fever, 11.



## MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
Paris.....	July 21.....	2,260,945	859	.....	1	.....	15	3	30	22	3
Paris.....	July 28.....	2,260,945	824	.....	4	.....	17	4	22	22	4
Glasgow.....	July 28.....	545,678	171	.....	.....	.....	2	1	1	.....	.....
Warsaw.....	July 21.....	444,814	260	.....	11	.....	.....	8	8	.....	.....
Calcutta.....	June 30.....	433,219	154	7	.....	.....	.....	.....	.....	.....	.....
Amsterdam.....	July 28.....	389,916	142	.....	.....	.....	2	1	2	.....	.....
Rome.....	June 16.....	388,300	187	.....	1	.....	3	.....	1	.....	.....
Copenhagen.....	July 24.....	300,000	137	.....	.....	.....	.....	3	8	.....	.....
Munich.....	July 14.....	275,000	142	.....	.....	.....	.....	3	3	.....	.....
Palermo.....	July 21.....	250,000	80	.....	2	.....	.....	1	2	.....	.....
Palermo.....	July 28.....	250,000	99	.....	.....	.....	.....	1	5	.....	.....
Belfast.....	July 28.....	227,022	87	.....	.....	.....	.....	3	.....	.....	.....
Bristol.....	July 14.....	226,510	46	.....	2	.....	.....	.....	.....	.....	.....
Genoa.....	July 28.....	179,599	86	.....	.....	3	.....	.....	.....	.....	.....
Trieste.....	July 21.....	154,300	93	.....	4	.....	.....	.....	1	.....	.....
Stuttgart.....	July 28.....	125,510	31	.....	.....	.....	.....	.....	.....	.....	.....
Bremen.....	July 21.....	122,000	26	.....	.....	.....	.....	.....	.....	.....	.....
Havre.....	July 21.....	112,074	83	.....	1	.....	14	1	.....	.....	.....
Pernambuco.....	July 10.....	110,000	95	.....	.....	3	3	.....	.....	.....	.....
Barmen.....	July 21.....	109,000	30	.....	.....	.....	.....	.....	.....	.....	.....
Barmen.....	July 28.....	109,000	29	.....	.....	.....	.....	.....	.....	.....	.....
Leghorn.....	July 22.....	101,854	32	.....	.....	.....	.....	.....	1	.....	.....
Leghorn.....	July 29.....	101,854	29	.....	.....	.....	.....	.....	.....	.....	.....
Mayence.....	July 7.....	65,802	33	.....	.....	.....	.....	.....	1	.....	.....
Cadiz.....	July 28.....	65,028	44	.....	.....	.....	.....	.....	.....	.....	.....
Guayaquil.....	June 17.....	30,000	71	.....	4	.....	.....	.....	.....	.....	.....
Guayaquil.....	June 24.....	30,000	60	.....	2	.....	.....	.....	.....	.....	.....
Vera Cruz.....	Aug. 2.....	23,800	24	.....	.....	.....	.....	.....	.....	.....	.....
Gibraltar.....	July 22.....	23,631	11	.....	.....	.....	.....	.....	2	.....	.....
Kingston, Canada.....	Aug. 3.....	16,216	1	.....	.....	.....	.....	.....	.....	.....	.....
Matamoras.....	July 21.....	12,000	10	.....	.....	.....	.....	.....	.....	.....	.....
Matamoras.....	July 28.....	12,000	6	.....	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

*Brooklyn, N. Y.*—The secretary of the board of health, in response to an inquiry from this Bureau, telegraphed under date of August 11: "Spanish bark 'Maria Louisa,' from Havana, arrived at quarantine July 30, Brooklyn, August 2. One death August 2, suspicious; another August 5. Autopsy, yellow fever. Bark ordered away from city and quarantine notified."

The health officer of the port, under date of August 6, gave his opinion that the disease was not yellow fever.

*Cape Charles Quarantine Station, Va.*—Acting Assistant Surgeon Clarkson telegraphed—

August 17: "Have quarantined British steamer 'Athens,' seven days from Pensacola to Newport News. Found on board case of hæmatemesis with collapse. Too ill for transportation. Am fumigating vessel."

Directions have been given to hold the vessel in quarantine for further observation.

*Delaware Breakwater Quarantine Station.*—Acting Assistant Surgeon Wm. P. Orr telegraphed under date of August 15: "British steamer 'Ardangorm,' from Havana for Philadelphia, came in last night. Lost steward at Havana and engineer during passage with yellow fever. Crew all well on arrival. Brig 'Sagua,' from Sagua la Grande, also in quarantine, on account of suspicious death before arrival."

*Goldsboro', N. C.*—A suspicious case from Jacksonville is isolated 3 miles from Goldsboro'.

*Tampa, Fla.*—Dr. J. P. Wall telegraphed—

August 12: "Yellow fever here. Diagnosis positive in 4 cases; others mild; some tendency to spread, and likely to be epidemic. May need relief measures and use of hospital built last year."

August 13: "Two suspicious cases since last report; one death. Tendency to epidemic. Only semi-weekly communication now with Manatee. No sickness in Plant City."

August 14: "One suspicious case and one death to-day. No sickness at Plant City."

August 16: "One death; no new cases."

*Manatee, Fla.*—Surgeon R. D. Murray telegraphed as follows:

August 10: "Three cases on the 9th; 2 cases for the 10th. No cases at Palmetto; nearly all people there gone."

*Jacksonville, Fla.*—Dr. Neal Mitchell, president of the board of health, telegraphed as follows:

August 13: "For last 24 hours, new cases, 4; deaths, 1 (Thomas Gelder); under treatment, 20—total number of cases, 25; total number of deaths, 4."

August 14: "For 24 hours ending 6 p. m., new cases, 3; deaths, none; under treatment, 23—total number of cases to date, 28; total number of deaths to date, 4."

August 15: "For 24 hours ending 6 p. m., new cases, none; deaths, none; under treatment, 23."

August 16: "For 24 hours ending 6 p. m., new cases, none; deaths, none; recovered, 3; under treatment, 20—total number of cases to date, 28; total number of deaths, 4."

August 16: "None need rations. Private contributions sufficient. Only two Boulogne tickets sold since establishment of refuge station."

**PRECAUTIONS TAKEN TO PREVENT FURTHER SPREAD OF THE DISEASE.**—Fumigation stations are now open at Chattahoochee, Fla., and Du Pont, Ga., in addition to that at Way Cross. These stations are not in immediate connection with the railway depots, but are some

distance down the railroad towards Florida. The one at Chattahoochee is at River Junction, about two miles from Chattahoochee. This station is under the charge of Assistant Surgeon Geddings, of the Marine Hospital Service. The one at Du Pont is at present under the general direction of Passed Assistant Surgeon Urquhart, whose headquarters are at Way Cross.

These fumigation stations are constructed from "box" cars, which are divided into two compartments by upright planking. In each compartment thus made, wire-netting shelves are placed at regular intervals as thickly as practicable. When articles are to be fumigated they are loosely scattered on the shelves, and subjected to fumes of burning sulphur. Other cars similarly shelved have been provided for the railway mail service, and clerks in that service open the mail-bags, puncture the letters and scatter them upon the wire shelves.

The cars, being movable, can be shifted from place to place, and the passage-way between the broad doors gives ample room for the shifting of baggage. Passengers coming North from an infected town must pass a short period of observation in the detention camp near Boulogne. From other towns in Florida they may pass the inspectors, but are not allowed to stop at any southern point by reason of local quarantine regulations.

The refuge camp near Boulogne is under command of Passed Assistant Surgeon Guit  ras. Persons from Jacksonville and other infected points falling sick at this camp will be returned to Jacksonville by the first train. It has been supplied with tents and cooking-utensils, and the hardships of detention will be reduced as much as possible. Persons unable to bring rations will be furnished them while undergoing detention, but it is probable that only those able to buy tickets will avail themselves of the camp. Ten days at the camp will be required to enable one to pass the inspectors and come North. The inspectors have been provided with conductors' punches, and they punch and issue to each passenger a ticket showing to what points bound, where from, date, number of pieces of baggage, and the name of the inspector. The traveler must also sign his name to the ticket as a means of identification.

The situation in Florida is calming down, but the panic is still very great. Notwithstanding the death rate in Jacksonville is small, and that it has at no time been great, either at Tampa, Manatee, or Plant City, yet the fears of the people in the adjoining towns are such as to lead them to establish rigid "shot-gun" quarantines in many places.

This panic, in many cases worse than the yellow fever itself, it is hoped to quell by furnishing a complete system of inspection under Government auspices. At the same time, such internal measures of sanitation as seem to be necessary will be resorted to wherever the local forces are inadequate to properly perform the work. At Jacksonville the Duval County Board of Health are doing their utmost to stamp out the disease, and it is hoped that their efforts may be successful. It is too soon to speak with positiveness of the origin of the epidemic, but it is quite probable that the case of McCormick, imported from Plant City, was not the first case at Jacksonville. Rumors of yellow fever at Jacksonville had been prevalent for several weeks. It is now known definitely that the first cases in Tampa last fall were brought by a schooner engaged in smuggling.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended..	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.....	Aug. 11.....	1,531,188	846	.....	.....	.....	.....	1	4	14	27	11	15
Philadelphia, Pa.....	Aug. 4.....	1,016,758	471	.....	.....	.....	.....	.....	35	1	1	.....	9
Philadelphia, Pa.....	Aug. 11.....	1,016,758	508	.....	.....	2	.....	.....	37	4	2	.....	4
Baltimore, Md.....	Aug. 11.....	431,879	270	.....	.....	.....	.....	.....	5	.....	3	.....	4
Boston, Mass.....	Aug. 4.....	415,000	244	.....	.....	.....	.....	.....	2	.....	5	.....	2
Boston, Mass.....	Aug. 11.....	415,000	239	.....	.....	.....	.....	.....	5	.....	6	.....	.....
San Francisco, Cal.....	Aug. 3.....	330,000	103	.....	.....	.....	.....	.....	3	.....	.....	.....	.....
Cincinnati, Ohio.....	Aug. 11.....	255,139	144	.....	.....	.....	.....	.....	3	.....	2	.....	4
New Orleans, La.....	Aug. 4.....	248,000	148	.....	.....	.....	.....	.....	5	.....	.....	.....	1
Pittsburgh, Pa.....	Aug. 11.....	230,000	.....	.....	.....	.....	.....	.....	3	.....	2	1	2
Washington, D. C.....	Aug. 11.....	225,000	154	.....	.....	.....	.....	.....	4	.....	.....	.....	8
Cleveland, Ohio.....	July 14.....	225,000	98	.....	.....	.....	.....	.....	.....	.....	2	.....	2
Louisville, Ky.....	Aug. 11.....	200,000	56	.....	.....	.....	.....	.....	4	.....	.....	.....	.....
Milwaukee, Wis.....	Aug. 4.....	195,010	109	.....	.....	.....	.....	.....	2	.....	.....	1	.....
Kansas City, Mo.....	Aug. 11.....	180,000	61	.....	.....	6	.....	.....	6	.....	.....	.....	1
Rochester, N. Y.....	Aug. 11.....	120,000	58	.....	.....	1	.....	.....	1	.....	2	.....	.....
Detroit, Mich.....	Aug. 11.....	116,340	86	.....	.....	.....	.....	.....	2	.....	3	.....	.....
Richmond, Va.....	Aug. 11.....	100,000	51	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Denver, Colo.....	Aug. 4.....	96,000	36	.....	.....	.....	.....	.....	3	.....	2	.....	.....
Denver, Colo.....	Aug. 11.....	96,000	35	.....	.....	.....	.....	.....	4	.....	1	.....	.....
Columbus, Ohio.....	Aug. 11.....	93,000	39	.....	.....	.....	.....	.....	1	.....	1	.....	1
Toledo, Ohio.....	Aug. 11.....	80,000	21	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Lowell, Mass.....	Aug. 11.....	72,000	20	.....	.....	.....	.....	.....	1	.....	2	.....	.....
Nashville, Tenn.....	Aug. 11.....	65,153	26	.....	.....	.....	.....	.....	3	1	.....	.....	.....
Fall River, Mass.....	Aug. 11.....	65,000	36	.....	.....	.....	.....	.....	2	.....	.....	.....	1
Cambridge, Mass.....	Aug. 11.....	64,079	21	.....	.....	.....	.....	.....	1	.....	.....	.....	2
Charleston, S. C.....	Aug. 4.....	60,145	45	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charleston, S. C.....	Aug. 11.....	60,145	44	.....	.....	.....	.....	.....	3	.....	.....	.....	.....
Reading, Pa.....	Aug. 6.....	60,000	25	.....	.....	.....	.....	.....	2	.....	1	.....	.....
Reading, Pa.....	Aug. 14.....	60,000	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Evansville, Ind.....	Aug. 9.....	53,000	36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Savannah, Ga.....	Aug. 10.....	52,827	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lynn, Mass.....	Aug. 13.....	50,000	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Manchester, N. H.....	Aug. 11.....	41,000	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mobile, Ala.....	Aug. 11.....	40,000	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Galveston, Tex.....	Aug. 3.....	40,000	26	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Portland, Me.....	Aug. 11.....	40,000	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Leavenworth, Kans.....	Aug. 4.....	35,275	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wheeling, W. Va.....	Aug. 11.....	35,000	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
East Saginaw, Mich.....	Aug. 13.....	33,000	21	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Burlington, Iowa.....	Aug. 8.....	30,166	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Davenport, Iowa.....	Aug. 4.....	30,084	16	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Davenport, Iowa.....	Aug. 11.....	30,084	10	.....	.....	.....	.....	.....	.....	4	.....	.....	.....
Altoona, Pa.....	Aug. 4.....	29,546	10	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Yonkers, N. Y.....	Aug. 10.....	27,500	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford, Mass.....	Aug. 11.....	26,845	16	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Auburn, N. Y.....	Aug. 11.....	26,000	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Haverhill, Mass.....	Aug. 11.....	25,000	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jackson, Mich.....	Aug. 11.....	22,509	16	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
Newton, Mass.....	Aug. 11.....	21,105	8	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Newport, R. I.....	Aug. 9.....	20,466	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

JOHN B. HAMILTON,  
Supervising Surgeon-General, Marine-Hospital Service.

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 34. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., August 24, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended August 24, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended August 4 corresponded to an annual rate of 16.0 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bristol, viz., 9.0, and the highest in Manchester, viz., 21.9 a thousand. Small-pox caused 2 deaths in Preston, 1 in Oldham, 1 in Sheffield, and 1 in Hull. Diphtheria caused 3 deaths in Manchester.

*London.*—One thousand three hundred and nine deaths were registered during the week, including measles, 29; scarlet fever, 18; diphtheria, 19; whooping-cough, 25; enteric fever, 9; diarrhœa and dysentery, 121; simple cholera and choleraic diarrhœa, 4. Diseases of the respiratory organs caused 167 deaths; different forms of violence, 49; and 6 suicides were registered. The deaths from all causes corresponded to an annual rate of 15.9 a thousand. In greater London 1,593 deaths were registered, corresponding to an annual rate of 15.0 a thousand of the population. In the "outer ring" 9 deaths from whooping-cough, 16 from diarrhœa, 5 from diphtheria, and 5 from measles were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended August 4 in the 16 principal town districts of Ireland was 18.2 a thousand of the population. The lowest rate was recorded in Lisburn, viz., 0.0, and the highest in Kilkenny, viz., 29.6 a thousand. In Dublin 143 deaths were registered, including whooping-cough, 11; enteric fever, 4; scarlet fever, 3; and diarrhœa, 1.



*Scotland.*—The deaths registered in 8 principal towns during the week ended August 4 corresponded to an annual rate of 15.9 a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Perth, viz., 6.4, and the highest in Aberdeen, viz., 18.7 a thousand. The aggregate number of deaths registered from all causes was 402, including measles, 3; scarlet fever, 3; diphtheria, 2; whooping-cough, 5; fever, 3; and diarrhoea, 22.

*Marseilles, France.*—Eight hundred and ninety deaths were registered during the month of July, 1888, including sporadic cholera, 1; small-pox, 9; enteric fever, 37; scarlet fever, 1; diphtheria and croup, 28; and measles, 45. The consul stated in his report, dated August 6, "the health of the city is remarkably good for mid-summer. The 1 case of sporadic cholera is only an ordinary event here."

*Catania, Italy.*—Four hundred and thirty-eight deaths were registered for the month of June, 1888, including small-pox, 77, and enteric fever, 10.

*Ceara, Brazil.*—One hundred and thirty-four deaths were registered for the month of June, 1888, including 2 from yellow fever.

*Montevideo.*—Four hundred and thirty-nine deaths were registered during the month of June, 1888, including 79 from small-pox.

*Malta and Goza.*—Three hundred and seventy deaths were registered during the month of June, 1888, including measles, 2; whooping-cough, 7; diphtheria, 1; enteric fever, 1; dysentery, 4.

*Hong-Kong, China.*—In response to a cablegram from the Department of State, "Does cholera exist in Hong-Kong?" the consul replied as follows, under date of August 15: "No cholera, Hong-Kong."

*Havana, Cuba.*—Twenty-six deaths from yellow fever are reported for the week ended August 10.

*Cairo, Egypt.*—The consul-general, in his dispatch dated July 23, 1888, states that "on the night of the 15th of June a heat-wave spread itself over Egypt, and it has since remained continuously. In a residence of three summers here I have experienced nothing comparable to it. The days have given air like that from the blast of a fiery furnace, while the nights have been intolerable from heat. The death rate throughout Egypt, which was already very high, suddenly mounted towards figures of decimation, and the destroyer has been reaping a great harvest of the dead. For the first week of this very hot weather the death rate rose in Cairo from a little over 40.0 to 76.8. The next week it was 71.6; the next 79.1, succeeded for the fourth week by 77.7.

These figures present the average. In Bodlac and Darb-el-Ahmar, two quarters of the city, the death rate was respectively 103 and 86.5, in one case more than decimation, in the other very nearly decimation. Truly no Indian death rate, except in periods of wide-spread and most fatal epidemics, reaches the present record in the Egyptian capital.

"For five years past the health of Cairo has been growing worse, and yet during these years a special detail of English sanitary experts has been supervising a Khedival sanitary department, the main object of which has been to look after the health of the most crowded Egyptian communities. The sanitary administration costs the Egyptian Government annually about \$200,000, not inclusive of publications and police service. The health of the large cities grows worse every year. The heavy summer death rate begins earlier in Cairo than in Alexandria. Just now a decidedly increased mortality is prevalent in the latter, and, following precedent, it will be much greater in August. Last year the death rate at one time in Alexandria was about equal to what it now is in Cairo. In some of the smaller cities the mortality has this year been greater even than the Cairo average, and about Damietta there has been typhus fever of a very fatal character. The rise of the Nile produces great humidity, and during August, September, and October no abatement of sickness may be hoped for. By the first of November a pleasing change comes, and from then until in the spring the temperature will be mild, the climate delightful, and health, for Egyptians, fairly good. It is gratifying, even under this burning sun and in hearing of these never-ending songs of death, to know that a season will come against which but few if any complaints may be entered."

July 25: "The average death rate for the week ended July 19, as shown in the health bulletin, reaches 97.2, while in Darb-el-Ahmer quarter it amounted to 126, and in Bodlac quarter to 100. Total deaths in this city were 685.

"The average maximum temperature for the same week was  $106\frac{1}{2}^{\circ}$  Fahr.; extreme heat,  $114\frac{1}{2}^{\circ}$ . The average minimum temperature was  $72\frac{1}{2}^{\circ}$ ; the extreme minimum,  $72\frac{1}{2}^{\circ}$ . The observations are taken at the Khedival Observatory, at Abbaseieh, two miles north of Cairo, where the unobstructed sea-breezes produce a lower temperature than in the city or south of it. Were it not for the great relief in temperature at night, existence would be unendurable."

## MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—								
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
Paris.....	Aug. 4.....	2,260,945	781			1		7	2	27	20	4
Glasgow.....	Aug. 4.....	545,678	184					3	1	1		
Warsaw.....	July 28.....	444,814	220			13						
Calcutta.....	July 7.....	433,219	163	10		1			7	3		
Amsterdam.....	Aug. 4.....	389,916	127								1	
Rome.....	June 23.....	300,467	204					6			4	
Rome.....	June 30.....	300,467	213					3			2	
Copenhagen.....	July 31.....	300,000	118							3	3	
Munich.....	July 28.....	275,000	172					1	6	5		
Palermo.....	Aug. 4.....	250,000	82						2	1		
Belfast.....	Aug. 4.....	227,022	87						3	1		
Genoa.....	Aug. 4.....	179,623	85				1				1	
Stuttgart.....	Aug. 4.....	125,510	31							1	2	
Bremen.....	July 28.....	122,000	35									
Havre.....	July 28.....	112,074	70		2			10	3			
Havre.....	Aug. 4.....	112,074	70		1			14				
Pernambuco.....	July 17.....	110,000	84				1	3				
Pernambuco.....	July 24.....	110,000	92				1	1	1			
Pernambuco.....	July 31.....	110,000	92				1	1	1			
Barmen.....	Aug. 4.....	109,000	36				1					
Leghorn.....	Aug. 5.....	94,423	35									
Cadiz.....	Aug. 4.....	65,028	37									
Guayaquil.....	July 15.....	30,000	49		3	1		1				
Curacao.....	July 28.....	25,000	6									
Vera Cruz.....	Aug. 9.....	23,800	19									
Gibraltar.....	July 29.....	23,631	14					1				
Kingston, Canada.....	Aug. 18.....	16,216										
Antigua.....	July 29.....	15,847	18									
Sagua la Grande.....	Aug. 4.....	15,605	17		2							
Cartagena, Colombia.....	July 28.....	13,000	10									
Matamoras.....	Aug. 4.....	12,000	10									
Laguayra.....	July 28.....	7,428	2									
San Juan del Norte.....	July 9.....	780	1									

## UNITED STATES.

*Ship Island Quarantine Station.*—The medical officer in charge reports the arrival, August 13, of the American barkentine "Joe Read," from Havana via Apalachicola, Fla. "Her bill of health was foul, and her steward was left sick in Havana, with 'symptoms of yellow fever,' about four hours before she left that port."

*Brownsville, Tex.*—The Secretary of the Treasury received a telegram from the collector of customs, Brownsville, Tex., as follows:

August 14: "State health officer proclaimed quarantine against Matamoras yesterday, on account of arrival of cargo and passengers direct from Vera Cruz. No sickness known to be among passengers or on vessel. Customs officers at Brownsville, Santa Maria, and Brazos have been instructed to assist State officers."

*Cape Charles Quarantine Station.*—Acting Assistant Surgeon Clarkson telegraphed—

August 18: "Sick seaman on steamship 'Athens,' died same day

(August 17). Diagnosis not positive. No others sick. Will use every precaution. The vessel is now in quarantine."

*Orlando and Sanford, Fla.*—The mayor of Orlando and the mayor of Sanford telegraphed, August 18, "there is no yellow fever in Orlando and Sanford or Orange County," and asked investigation, as their mails are threatened to be cut off.

*Manatee, Fla.*—Surgeon Murray telegraphed—

August 18: "Manatee—total, 25 cases; none since 11th. Village fumigated, and bedding cleaned. Palmetto—1 case 15th; for 16th, 2; 17th, 2. No connection with Manatee cases. Restrictive measures adopted."

*Tampa, Fla.*—Dr. J. P. Wall telegraphed—

August 18: "Only 1 mild case since last report. Eleven cases in all, in 8 of which diagnosis positive. Three deaths with black-vomit. Another fever, probably mild dengue, here. Only 1 case of yellow fever under treatment."

August 20: "Outlook better."

*Jacksonville, Fla.*—Dr. Neal Mitchell telegraphed—

August 17: "Official bulletin for 24 hours ending 6 p. m. New cases, 4—total number of cases to date, 32; total number of deaths to date, 4."

August 18: "Official bulletin for 24 hours ending 6 p. m. New case, 1; death, 1; recovered, 2; under treatment, 18—total number of cases to date, 33; total number of deaths to date, 5. Fever assuming a more severe type."

August 19: "Official bulletin for 24 hours ending 6 p. m. New cases, 5, one being an African; death, 1; under treatment, 22. Number of cases to date, 38; total number of deaths to date, 6."

August 23: "Official bulletin for 24 hours ending 6 p. m. New cases, 16; deaths, 2; recoveries, 2; under treatment, 43. Total number of cases to date, 70; total number of deaths to date, 10."

August 24: "Official bulletin for 24 hours ending 6 p. m. New cases, 14; deaths, 2; recoveries, 1; under treatment, 54. Total number of cases to date, 84; total number of deaths to date, 12."

*Other places in Florida.*—A sanitary inspection is now being conducted under the direction of this Bureau, with a view of obtaining definite information from other places in Florida, and removing, if possible, restrictions from places not infected.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Aug. 18.	1,532,060	802						8	8	40	13	24
Chicago, Ill.	Aug. 18.	800,000	339						9		9	8	4
Brooklyn, N. Y.	Aug. 11.	793,960	366		2				3	1	17		
Baltimore, Md.	Aug. 18.	431,879	224								1		5
Boston, Mass.	Aug. 18.	415,000							2	1	7		3
San Francisco, Cal.	Aug. 10.	300,000	98						2		3		
New Orleans, La.	Aug. 11.	248,000	109						1	1	11		
Buffalo, N. Y.	Aug. 11.	230,000	136						1				
Buffalo, N. Y.	Aug. 18.	230,000	135			1			1		3		
Pittsburgh, Pa.	Aug. 18.	230,000	96						6	1	4	1	3
Washington, D. C.	Aug. 18.	225,000	110						4				
Cleveland, Ohio.	July 21.	225,000	140										2
Cleveland, Ohio.	July 28.	225,000	151										
Louisville, Ky.	Aug. 18.	200,000	60						3	1	3	1	
Milwaukee, Ky.	Aug. 18.	195,000	78						4		1		
Kansas City, Mo.	Aug. 18.	180,000	59						11				
Minneapolis, Minn.	Aug. 17.	180,000	79						1				
St. Paul, Minn.	Aug. 18.	175,000	49						2		1		
Rochester, N. Y.	Aug. 18.	120,000	68						2			1	
Detroit, Mich.	Aug. 18.	116,340	98						1				
Richmond, Va.	Aug. 11.	100,000	51						1	1	1		
Denver, Colo.	Aug. 17.	96,000	33						6				
Columbus, Ohio.	Aug. 18.	93,000	33						6		4		
New Haven, Conn.	Aug. 18.	82,000	32						3				1
Toledo, Ohio.	Aug. 18.	80,000	21						3				
Nashville, Tenn.	Aug. 18.	65,153	24						2				
Fall River, Mass.	Aug. 18.	65,000	36										
Cambridge, Mass.	Aug. 18.	64,079	26						1		2		2
Charleston, S. C.	Aug. 18.	60,145	50						1				1
Evansville, Ind.	Aug. 16.	53,000	20										
Lynn, Mass.	Aug. 18.	50,000	22						1				
Oakland, Cal.	Aug. 11.	50,000	16						1		2		
Manchester, N. H.	Aug. 18.	41,000	23						1				
Galveston, Tex.	Aug. 10.	40,000	11										1
Mobile, Ala.	Aug. 18.	40,000	16										
East Saginaw, Mich.	Aug. 20.	34,000	5										
Burlington, Iowa.	Aug. 15.	30,166	8										
Davenport, Iowa.	Aug. 20.	30,084	10								2		
Altoona, Pa.	Aug. 11.	29,546	11										
Salem, Mass.	Aug. 18.	29,000	14										
Yonkers, N. Y.	Aug. 18.	27,500	8										
New Bedford, Mass.	Aug. 18.	26,845	25										
Auburn, N. Y.	Aug. 18.	26,000	9						1				
Haverhill, Mass.	Aug. 18.	25,000	11										
Jackson, Mich.	Aug. 18.	22,500	16						1		3		
Newport, R. I.	Aug. 16.	20,466	5								1		

JOHN B. HAMILTON,  
*Supervising Surgeon-General, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

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TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., August 31, 1888.

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(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended August 11 corresponded to an annual rate of 17.6 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Derby, viz., 9.2, and the highest in Plymouth, viz., 23.5 a thousand. Small-pox caused 1 death in Preston, 1 in Nottingham, and 3 in Manchester. Diphtheria caused 3 deaths in Nottingham.

*London.*—One thousand four hundred and seventy-six deaths were registered during the week, including measles, 51; scarlet fever, 17; diphtheria, 25; whooping-cough, 27; enteric fever, 6; diarrhœa and dysentery, 138; simple cholera and choleraic diarrhœa, 5. Diseases of the respiratory organs caused 183 deaths; different forms of violence, 56; and 5 suicides were registered. The deaths from all causes corresponded to an annual rate of 18.0 a thousand. In greater London 1,791 deaths were registered, corresponding to an annual rate of 16.9 a thousand of the population. In the "outer ring" 21 deaths from diarrhœa, 4 from diphtheria, and 4 from measles were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended August 11 in the 16 principal town districts of Ireland was 16.9 a thousand of the population. The lowest rate was recorded in Galway, viz., 3.4, and the highest in Armagh, viz., 25.8 a thousand. In Dublin 131 deaths were registered, including whooping-cough, 3; enteric fever, 1; scarlet fever, 3; and diarrhœa, 4.

Twenty-two thousand nine hundred and eighty-three deaths were registered in Ireland during the quarter ended June 30, 1888, corresponding to an annual rate of 19.2 a thousand of the estimated population. The deaths included measles, 606; scarlet fever, 229; typhus,

135; whooping-cough, 281; diphtheria, 110; enteric fever, 140; diarrhoea, 228; and simple cholera, 4.

*Scotland.*—The deaths registered in 8 principal towns during the week ended August 11 corresponded to an annual rate of 15.6 a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Leith, viz., 11.2, and the highest in Greenock, viz., 18.9 a thousand. The aggregate number of deaths registered from all causes was 395, including measles, 6; scarlet fever, 2; diphtheria, 7; whooping-cough, 5; fever, 6; and diarrhoea, 87.

*Denmark.*—The Danish Government issued a quarantine order under date of July 27, 1888, as follows:

[Translation.]

The proclamation of the Ministry of Justice dated February 24, 1888, and ordering quarantine against ships coming from or having touched Italian ports on the Adriatic Sea between Ortona and Bari, both inclusive, and the provisions against importation of the things mentioned in the law of July 2, 1880, § 32, sec. 1, from the above-named harbors, is hereby discontinued.

Quarantine will henceforth be discontinued.

The provisions of sec. 2, § 1, of the law of July 2, 1880, referring to precautionary measures against the introduction of contagious diseases into the kingdom, are hereafter to be enforced with reference to the following places:

Ports on the French coast between Nantes and St. Malo, both inclusive; Egersund; Grimsby; all ports in Chili; all ports in Florida; all ports in Jamaica; all ports in Martinique; all ports in Guadeloupe; St. Iago di Cuba; ports in the East Indies, Tonkin, and Cochin China; Trieste; all ports in Egypt; all ports on the Red Sea; Rio de Janeiro and Havana.

The prohibition against the importation into the kingdom of used linen, used articles of clothing, and used bed-clothes, providing the articles named do not constitute the personal effects of travelers, waste cotton or wool, refuse paper, hair and hides, remains in force in reference to the following places:

Ports on the French coast between Nantes and St. Malo, both inclusive; Egersund; Grimsby; all ports in Chili; all ports in Florida; all ports in Jamaica; all ports in Martinique; all ports in Guadeloupe; St. Iago de Cuba; and ports in East India, Tonkin, and Cochin China.

The prohibition against the importation into the kingdom of used linen, used articles of clothing, and used bed-clothes, providing the articles named do not constitute the personal effects of travelers, remains in force in reference to Rio de Janeiro and Havana. In addition thereto, special attention is to be paid to the cleansing under official inspection of linen, clothing, and bed-clothes brought from either of the last-named places as the personal effects of travelers.

This order to go into effect at once.

*Martinique.*—The United States consul, in his dispatch dated August 7, 1888, states that "by the last official report of the governor, St. Pierre and Fort de France have enjoyed absolute immunity from small-

pox for more than six weeks past, and that in the whole island there have been during the last fortnight of July only 160 cases and 30 deaths from this disease, all in the interior of the island."

*Bordeaux, France.*—Four hundred and seventeen deaths were registered during the month of July, 1888, including enteric fever, 13, and diphtheria and croup, 25.

*Nassau, N. P.*—The United States consul, in his report for the week ended August 18, stated: "Weather hot and wet. City healthy."

*Bermuda.*—The United States consul, in his report for the week ended August 21, stated: "Islands very healthy."

*Havana.*—Twenty-nine deaths from yellow fever were registered during the week ended August 18, 1888.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles. Whooping-cough.
Paris.....	Aug. 11.....	2,260,945	869	.....	1	.....	9	4	24	29	2
Glasgow.....	Aug. 11.....	545,678	166	.....	.....	5	.....	2	.....	.....	.....
Warsaw.....	Aug. 4.....	444,814	194	.....	.....	.....	.....	.....	.....	.....	.....
Calcutta.....	July 14.....	433,219	143	11	.....	.....	.....	.....	.....	.....	.....
Rome.....	July 7.....	391,188	211	.....	.....	.....	6	.....	.....	.....	.....
Rome.....	July 14.....	391,188	209	.....	.....	.....	1	1	4	.....	.....
Amsterdam.....	Aug. 11.....	389,916	149	.....	.....	.....	1	.....	.....	.....	.....
Copenhagen.....	Aug. 7.....	300,000	111	.....	.....	.....	1	.....	.....	6	.....
Munich.....	Aug. 4.....	275,000	167	.....	.....	.....	.....	.....	.....	5	.....
Edinburgh.....	July 28.....	262,733	69	.....	.....	.....	.....	1	1	.....	.....
Edinburgh.....	July 4.....	262,733	79	.....	.....	.....	.....	.....	.....	.....	.....
Palermo.....	Aug. 11.....	250,000	79	.....	.....	.....	.....	.....	.....	1	.....
Belfast.....	Aug. 11.....	227,022	74	.....	.....	.....	.....	.....	.....	.....	.....
Bristol.....	Aug. 7.....	125,510	58	.....	.....	.....	1	.....	.....	1	.....
Havana.....	Aug. 18.....	208,000	166	29	2	.....	5	.....	.....	.....	.....
Genoa.....	Aug. 11.....	179,664	71	.....	1	1	.....	.....	.....	.....	.....
Trieste.....	July 28.....	154,500	93	.....	4	.....	.....	.....	.....	1	.....
Stuttgart.....	Aug. 11.....	125,510	38	.....	.....	.....	.....	.....	.....	.....	.....
Bremen.....	Aug. 4.....	122,000	36	.....	.....	.....	.....	.....	.....	2	.....
Havre.....	Aug. 11.....	112,074	88	.....	.....	.....	17	1	.....	.....	.....
Leghorn.....	Aug. 12.....	101,854	31	.....	.....	.....	.....	.....	.....	.....	.....
Leith.....	July 28.....	74,320	21	.....	.....	.....	1	.....	.....	.....	.....
Leith.....	Aug. 4.....	74,320	15	.....	.....	.....	.....	.....	.....	.....	.....
Cadiz.....	Aug. 11.....	65,028	45	.....	.....	.....	.....	.....	.....	.....	.....
Matanzas.....	Aug. 22.....	40,000	26	.....	.....	3	.....	.....	.....	.....	.....
Guayaquil.....	July 22.....	30,000	54	.....	1	.....	.....	.....	.....	.....	.....
Guayaquil.....	July 29.....	30,000	34	.....	1	.....	.....	.....	.....	.....	.....
Vera Cruz.....	Aug. 16.....	23,800	22	.....	.....	.....	.....	.....	.....	.....	.....
Gibraltar.....	Aug. 5.....	23,631	6	.....	.....	.....	1	.....	.....	.....	.....
Cape Haytien.....	Aug. 12.....	15,000	9	.....	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

*Buffalo, N. Y.*—The medical officer in charge of the Marine-Hospital Service reported, under date of August 23, as follows: "Since my last report (July 30) there have occurred in this city 10 new cases of small-pox, making a total of 21 up to the present time. Of these 4 have proved fatal."

*Springtown, Ohio.*—The president of the State board of health reported August 23, 1888, "another case of small-pox has developed at Springtown, Monroe County, Ohio."

*St. Mark's, Fla.*—At the request of citizens, the governor has appointed a board of health for the county, and, in accordance with instructions from this Bureau, persons will not be allowed to land from infected ports unless provided with a certificate that their baggage, &c., is thoroughly fumigated.

*Blackshear, Ga.*—The postal clerk, Mr. Ballentine, sick with yellow fever at Blackshear, was thoroughly isolated and guarded, and no communication allowed outside the line.

Surgeon W. H. H. Hutton telegraphed August 29: "Ordered Ballentine's bedding burned last Monday; clothing and linen washed, boiled, and rinsed in bichloride solution; house fumigated. Will repeat the process Friday, personally, and remove quarantine Monday if nothing further occurs."

*Fernandina, Fla.*—In regard to the rumor of the existence of a case of yellow fever at Fernandina, Acting Assistant Surgeon Starbuck telegraphed August 28: "Rumor false. City never healthier or in better sanitary condition."

*Tampa, Fla.*—Dr. J. P. Wall reported August 26: "No fatal cases of yellow fever since the 14th instant. \* \* \* The fever on the Manatee River has thus far proven to be of a mild type—very few deaths."

*Jacksonville, Fla.*—Dr. Neal Mitchell, president of the board of health, telegraphed as follows:

August 25: "For 24 hours ending 6 p. m.: New cases, 7; deaths, none; recoveries, 2; under treatment, 59. Total number of cases to date, 91; total number of deaths to date, 12."

August 26: "For 24 hours ending 6 p. m.: New cases, 9; deaths, 2; recoveries, 2; under treatment, 64. Total number of cases to date, 100, of which 9 are colored; total number of deaths to date, 14. One case received from Camp Perry to-night."

August 27: "For 24 hours ending 6 p. m.: New cases, 10; deaths, 3; recoveries, 9; under treatment, 62. Total number of cases to date, 110; total number of deaths to date, 17."

August 28: "For 24 hours ending 6 p. m.: New cases, 21; deaths, 2; recoveries, 9; under treatment, 72. Total cases, 131; total deaths, 19."

August 29: "For 24 hours ending 6 p. m.: New cases, 34; deaths, 4. Total number of cases, 165; total number of deaths, 23."



SUMMARY.—August 30, 6 p. m.: Total number of cases to date, 188; total number of recoveries, 40; total number of deaths, 26; total number of cases now under treatment, 122.

*Camp Perry, Fla.*—Passed Assistant Surgeon Guitéras telegraphed—

August 29: "Eighty refugees at muster this morning, and 17 employés."

August 30: "Arrivals, 5; at muster, 85; employés, 18; discharged to-day, 1."

*Bainbridge, Ga.*—Upon rumor of yellow fever at this place, Assistant Surgeon H. D. Geddings was directed to proceed to that village, and in his report, through Surgeon Hutton, dated August 27, 1888, he states that—

Bainbridge is situated in Baker County, on the Flint River, and is 8 miles from the line of the Savannah, Florida and Western Railroad, and is connected with it by a branch road. The population is about 1,600, and is equally divided as to whites and blacks. The soil is a fine white sand, underlying which is a red decomposed sandstone, which makes a very porous soil, through which water percolates rapidly, and even after the heaviest rains no water collects or stands stagnant. The elevation of the town was given to me as 119.6 feet above tide-water. In the past six months there have been only 3 deaths in the town—one white female, from pyo-salpinx; one colored male adult, from typhoid fever, and one colored child, from eclampsia. At present there are but 2 cases of illness in the town, one of which was reported to me as "nephritis" of long standing, and the other (which I visited) a case of remittent malarial fever. Apart from this no malarial diseases exist.

The town is in the hands of a thoroughly live, intelligent, and vigilant board of health, and all persons coming in, either by rail or boat, are required to present satisfactory certificates of health and non-exposure to contagion of any kind. The town is thoroughly policed daily, and weekly inspections are made by the board and a committee of citizens. The streets are clean, well kept, and a large force is at work on them daily. The privies are open (without vaults), and once in each week are raked out, the excrement buried, and the spots disinfected with a solution of sulphate of iron and quicklime. The water-supply is admirable. There are no surface wells in the town, and the cisterns which existed prior to the introduction of the present system have fallen into disuse, except for washing purposes. The supply is derived from two artesian wells—No. 1, 965 feet, and No. 2, 1,135 feet in depth. \* \* \* These waters are pumped into a stand-pipe and distributed through about 6 miles of mains, and from them to almost every residence in the town. [Analysis was inclosed.]

In conclusion, I would state that the town of Bainbridge is in a highly satisfactory sanitary condition; that the health condition at present is as good as could be reasonably desired; that the importation of contagion is almost an impossibility under existing regulations, and, most important of all, that the utmost vigilance prevails and will be maintained.

Live Oak, Lake City Junction, and Lake City have also been inspected by Dr. Posey, and reported healthy.



The following circular has been issued :

*Circular.—Regulations for the prevention of the spread of yellow fever from certain infected places in the State of Florida.*

TREASURY DEPARTMENT,  
Office Supervising Surgeon-General, U. S. Marine Hospital-Service,  
Washington, D. C., August 28, 1888.

In accordance with the act of April 29, 1878, and appropriation acts authorizing the maintenance of quarantine at points of danger, the following regulations are framed to assist in the work of preventing the spread of yellow fever, now prevailing as an epidemic in certain towns in the State of Florida :

1. A camp of refuge for persons from infected places in Florida is hereby established, to be under command of Passed Assistant Surgeon Guitéras, on the south bank of the St. Mary's River, near the crossing of the Savannah, Florida and Western Railroad, to be known as Camp Perry. Temporary quarantine stations are hereby established, under direction of Surgeon Hutton, Marine-Hospital Service, near Way Cross, Ga., and Live Oak, Fla. Those at Du Pont, Ga., and Chattahoochee River Junction are hereby discontinued.

2. At the stations aforesaid, an inspection will be made of all persons, baggage, mail, and express arriving by rail from points south ; and in case of arrival of any person, mail, baggage, or express matter capable of conveying infection, coming from an infected place or a place not known to be healthy, as shown by recent inspection reports, then such person shall either be returned to the original place of embarkation or to Camp Perry, at his or her option, and the baggage of such person shall be held for fumigation, and fumigated under the direction of the officer in charge. Mail matter from infected places will be fumigated under the direction of the Railway Mail Service, under orders already issued by that Service.

3. All persons arriving in Camp Perry will be under the orders of the commanding officer, and will not depart the camp without permission until ten days shall have elapsed from the date of their departure from an infected place. A special daily train will run between Jacksonville and Camp Perry, for the purpose of conveying persons from Jacksonville and such other business as may be incident thereto, and at the expiration of the detention period such persons will be taken to Way Cross, and then allowed to proceed to their destination without further detention:

4. Railway agents, conductors, or other persons in charge of railway-trains south of and including those of the Savannah, Florida and Western Railroad will not receive persons from infected places on board trains, except to the refuge camp as provided in paragraph 1 of this circular, and sleeping-cars will not be allowed to proceed south of Way Cross, Ga., until the cessation of the epidemic.

5. An additional refuge camp, under the same regulations as those governing Camp Perry, will be established in the mountains of North Carolina (the site hereafter to be determined) as soon as practicable.

JOHN B. HAMILTON,  
Supervising Surgeon-General.

Approved:  
C. S. FAIRCHILD,  
Secretary of the Treasury.

Since the issue of the foregoing circular, the erection of 200 cheap barrack-huts has been authorized to be built near Jacksonville for the negroes liable to propagate the fever, who will immediately be removed thereto, and their present quarters thoroughly disinfected; and special excursion trains will run at intervals, under guard, to some point in the North Carolina mountains, to be hereafter designated, as soon as a sufficient number indicate their desire to go. Such persons, on arrival at their destination, will be released on parol, not to go to the sea-board or quarantined towns within ten days from date of departure from Jacksonville.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Varicolid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
New York, N. Y.	Aug. 25	1,532,932	754						10	19	16	9	17
Philadelphia, Pa.	Aug. 18	1,016,758	439			2			32	3	2	1	5
Chicago, Ill.	Aug. 25	800,000	322						13	1	19	1	5
Baltimore, Md.	Aug. 25	431,879	164						13		2		
San Francisco, Cal.	Aug. 17	350,000	108						3		5		1
Cincinnati, Ohio.	Aug. 18	255,139	153						2	1	3		5
Cincinnati, Ohio.	Aug. 25	255,139	119						5	2	1		1
New Orleans, La.	Aug. 18	248,000	100								7		2
New Orleans, La.	Aug. 25	248,000	103								13		1
Pittsburgh, Pa.	Aug. 25	230,000	95						7		3	1	6
Louisville, Ky.	Aug. 27	200,000	60						4		2		
Milwaukee, Wis.	Aug. 25	195,000	101								1		
Kansas City, Mo.	Aug. 25	180,000	56						5				
Minneapolis, Minn.	Aug. 24	180,000	56						1	1			5
St. Paul, Minn.	Aug. 25	175,000	45						2		1		
Rochester, N. Y.	Aug. 25	120,000	61						2				
Detroit, Mich.	Aug. 25	116,340						3			2		
Richmond, Va.	Aug. 25	100,000	39						1				
Denver, Colo.	Aug. 24	96,000	37						6	1			1
Columbus, Ohio.	Aug. 25	93,000	30						1		1		
Toledo, Ohio.	Aug. 25	80,000	19										
Lowell, Mass.	Aug. 27	72,000	44							2	5		
Nashville, Tenn.	Aug. 25	65,153	20						1		1		
Fall River, Mass.	Aug. 25	65,000	36						1	2	1		
Charleston, S. C.	Aug. 25	60,145	44						3				
Cambridge, Mass.	Aug. 25	59,660	35						1		3		
Evansville, Ind.	Aug. 23	53,000	19										1
Savannah, Ga.	Aug. 17	52,827	20										
Oakland, Cal.	Aug. 18	50,000	14										
Lynn, Mass.	Aug. 25	50,000	17						3		3		
Manchester, N. H.	Aug. 25	41,000	16										
Mobile, Ala.	Aug. 25	40,000	17										
Galveston, Tex.	Aug. 17	40,000	15										
Portland, Me.	Aug. 18	40,000	12						1				
Portland, Me.	Aug. 25	40,000	12										
Wheeling, W. Va.	Aug. 18	35,000	11										
Wheeling, W. Va.	Aug. 25	35,000	9						2				
East Saginaw, Mich.	Aug. 27	33,000	12						1				
Burlington, Iowa.	Aug. 23	30,166	4										
Davenport, Iowa.	Aug. 25	30,084	3										
Salem, Mass.	Aug. 27	29,000	15								1		
Yonkers, N. Y.	Aug. 24	27,500	7								1		
New Bedford, Mass.	Aug. 25	26,845	14										
Auburn, N. Y.	Aug. 25	26,000	9						1				
Haverhill, Mass.	Aug. 25	25,000	16										
Jackson, Mich.	Aug. 25	22,500	12								1		
Newton, Mass.	Aug. 26	21,105	6										
Newport, R. I.	Aug. 23	20,466	12										

JOHN B. HAMILTON,  
Supervising Surgeon-General, Marine-Hospital Service.



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 36. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., September 7, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended September 7, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended August 18 corresponded to an annual rate of 16.4 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bolton and Nottingham, viz., 12.9, and the highest in Manchester, viz., 22.8 a thousand. Small-pox caused 1 death in Oldham. Diphtheria caused 3 deaths in Manchester and 2 in Salford.

*London.*—One thousand three hundred and thirty deaths were registered during the week, including measles, 33; scarlet fever, 17; diphtheria, 13; whooping-cough, 20; typhus, 2; enteric fever, 2; diarrhœa and dysentery, 162; simple cholera and choleraic diarrhœa, 4. Diseases of the respiratory organs caused 167 deaths; different forms of violence, 47; and 9 suicides were registered. The deaths from all causes corresponded to an annual rate of 16.2 a thousand. In greater London 1,649 deaths were registered, corresponding to an annual rate of 15.6 a thousand of the population. In the "outer ring" the deaths included diarrhœa, 31; diphtheria, 5; whooping-cough, 8; and measles, 7.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended August 18 in the 16 principal town districts of Ireland was 17.0 a thousand of the population. The lowest rate was recorded in Lisburn, viz., 4.8, and the highest in Waterford, viz., 25.5 a thousand. In Dublin 123 deaths were registered, including whooping-cough, 3; enteric fever, 2; scarlet fever, 1; diarrhœa, 5; typhus, 1; and diphtheria, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week ended August 18 corresponded to an annual rate of 17.3 a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Greenock, viz., 10.1, and the highest in Paisley, viz., 24.5 a thousand. The aggregate number of deaths registered from all causes was 438, including measles, 6; scarlet fever, 6; diphtheria, 3; whooping-cough, 5; fever, 3; and diarrhœa, 20.

*Netherlands.*—The deaths registered in the principal cities of the Netherlands, having a population of 1,149,778, during the month of June, 1888, corresponded to an annual rate of 22.4 a thousand of the population. The lowest rate was recorded in Haarlem, viz., 16.5, and the highest in Dordrecht, viz., 32.9. The total number of deaths from all causes was 2,081, including typhus and enteric fever, 6; scarlet fever, 1; measles, 11; whooping-cough, 40; diarrhœa and dysentery, 35; and simple cholera, 7.

*Calcutta.*—Two thousand seven hundred and thirty-eight deaths were registered during the quarter ended June 30, 1888, including cholera, 514; fevers, 697; and dysentery and diarrhœa, 200.

*Ruatan, Honduras.*—The following reports have been received from the United States consul:

July 7: "The malarial fever of a pernicious type which prevailed here from December to June seems to have disappeared."

July 14: "Good health is enjoyed in this port and island."

July 21: "Sanitary condition of this port and island remarkably good."

July 28: "On the 19th instant the Board of Health of New Orleans declared this an infected port. 'No cause exists for such action.'"

*Cardenas, Cuba.*—The United States commercial agent reports, under date of August 24, 1888: "Good health prevails in town and harbor. No American vessels in port."

*Havana, Cuba.*—Thirty-five deaths from yellow fever were registered during the week ended August 24, 1888. Week ended August 31, 15.



## MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
Glasgow .....	Aug. 11.....	545,678	203	.....	.....	.....	.....	1	2	2	.....
Warsaw .....	Aug. 11.....	444,814	220	.....	.....	.....	.....	.....	5	4	.....
Calcutta .....	July 21.....	433,219	159	12	.....	.....	.....	.....	2	2	.....
Amsterdam .....	Aug. 18.....	389,915	120	.....	.....	.....	1	2	2	1	.....
Copenhagen .....	Aug. 14.....	300,000	108	.....	.....	.....	.....	.....	3	5	.....
Edinburgh .....	Aug. 11.....	282,733	75	.....	.....	.....	.....	1	.....	2	.....
Belfast .....	Aug. 18.....	227,022	70	.....	.....	.....	.....	1	.....	.....	.....
Leipsic .....	Aug. 11.....	180,000	74	.....	.....	.....	.....	1	.....	.....	.....
Leipsic .....	Aug. 18.....	180,000	57	.....	.....	.....	.....	.....	1	2	1
Trieste .....	Aug. 4.....	154,500	87	.....	4	.....	.....	.....	1	.....	.....
Trieste .....	Aug. 11.....	154,500	86	.....	2	.....	.....	.....	.....	1	.....
Stuttgart .....	Aug. 18.....	125,510	42	.....	.....	.....	.....	.....	.....	1	.....
Bremen .....	Aug. 11.....	118,000	50	.....	.....	.....	.....	.....	1	.....	2
Barmen .....	Aug. 11.....	109,000	38	.....	.....	.....	.....	.....	.....	.....	.....
Barmen .....	Aug. 18.....	109,000	39	.....	.....	1	.....	1	1	1	.....
Leith .....	Aug. 11.....	74,320	16	.....	.....	3	.....	.....	.....	.....	.....
Mayence .....	July 21.....	65,802	23	.....	.....	.....	.....	1	.....	.....	.....
Mayence .....	July 28.....	65,802	28	.....	.....	.....	.....	.....	.....	1	.....
Cadiz .....	Aug. 18.....	65,028	50	.....	.....	.....	.....	.....	.....	.....	.....
Merida .....	Aug. 14.....	48,818	39	.....	.....	.....	.....	.....	.....	.....	.....
Merida .....	Aug. 21.....	48,818	27	.....	.....	1	.....	.....	.....	.....	.....
Vera Cruz .....	Aug. 23.....	23,800	21	.....	.....	.....	.....	.....	.....	.....	.....
Gibraltar .....	Aug. 12.....	23,631	6	.....	.....	.....	1	.....	.....	.....	.....
Kingston, Canada .....	Aug. 24.....	16,216	1	.....	.....	.....	.....	.....	.....	.....	.....
Sagua la Grande .....	Aug. 18.....	15,603	19	2	.....	.....	.....	.....	.....	.....	.....
Laguayra .....	Aug. 11.....	7,428	3	.....	.....	.....	.....	.....	.....	.....	.....
Laguayra .....	Aug. 18.....	7,428	3	.....	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

*San Francisco, Cal.*—The secretary of the State and county health department, in his report dated August 28, stated that "after the absence of small-pox from this city since July 1, the following cases have occurred: August 22, 1 case; August 26, 1 case; August 27, 3 cases; August 28, 3 cases. The source of infection cannot be traced, so far. All men from 18 to 30, some of them from the country."

*Buffalo, N. Y.*—Passed Assistant Surgeon Wheeler, Marine-Hospital Service, reported, under date of September 4: "Since my last report (August 23) there have been 14 new cases of small-pox in this city, and 2 deaths, making the whole number of cases up to date 35, and the number of deaths 6."

*Coshocton, Ohio.*—The president of the State board of health reported, under date of August 31: "A case of small-pox is reported at Coshocton. The patient has been removed to quarters outside the village, and his dwelling disinfected. The origin of the disease is yet unknown."

*Delaware Breakwater Quarantine Station.*—The steamer "Progreso," four days from Havana, arrived at this quarantine station September 3, having left one of her crew in Havana sick with yellow fever. The schooner "Adele Thackeray," also from Havana, arrived in the evening of the same day. The captain reports the loss on the voyage of two

seamen from yellow fever. Two other members of the crew had the fever, but recovered during the voyage. All well on arrival. These vessels are now in quarantine.

*Brownsville, Tex.*—The collector of customs telegraphed September 3 as follows: "Quarantine against Matamoras terminated Friday. To-day Matamoras declared the retaliatory quarantine against Brownsville off. Business resumed at noon. No contagious or infectious sickness."

*Manatee, Fla.*—Surgeon R. D. Murray telegraphed—

September 4: "One isolated case; Palmetto, 1 case on 31st; 14 in all to date. River villages healthy. Total cases recorded, 31. Last one on the 24th.

*Tampa, Fla.*—Dr. J. P. Wall telegraphed—

September 4: "Seven cases reported in last two days. Four positive; mostly mild type. No deaths."

*Jacksonville, Fla.*—Dr. Neal Mitchell, president board of health, telegraphed as follows:

August 31: "For 24 hours ending 6 p. m.: New cases, 23; deaths, 4. Total cases, 211; total deaths, 30."

September 1: "For 24 hours ending 6 p. m.: New cases, 23; deaths, 2. Total cases to date, 234; total deaths to date, 32."

September 2: "For 24 hours ending 6 p. m.: New cases, 24; deaths, 2. Total number of cases to date, 258; total number of deaths to date, 34."

September 3: "For 24 hours ending 6 p. m.: New cases, 37; deaths, 2. Total number of cases to date, 295; total number of deaths to date, 36."

September 4: "For 24 hours ending 6 p. m.: New cases, 43; deaths, 1. Total number of cases to date, 338; total number of deaths to date, 37."

September 5: "For 24 hours ending 6 p. m.: New cases, 50; deaths, 5. Total number of cases to date, 388; total number of deaths to date, 42."

September 6: "For 24 hours ending 6 p. m.: New cases, 46; deaths, 10. Total number of cases to date, 434; total number of deaths to date, 52."

September 7: "For 24 hours ending 6 p. m.: New cases, 77; deaths, 8. Total cases to date, 511; total deaths, 60. The number of cases under treatment is no longer furnished in the dispatches.

*Camp Perry, Fla.*—Passed Assistant Surgeon John Guitéras, telegraphed as follows:

September 1: "At muster, 152; discharged to-day, 13; arrivals yesterday, 30."

September 2: "At muster, 158; received yesterday, 19; discharged to-day, 12."

September 3: "Discharged well, 2; sent to Jacksonville with yellow fever, 1; expelled for misconduct and sent to Jacksonville, 9; eloped, 1; at muster, 147."

September 5: "At muster, 145; admissions yesterday, 17; discharged to-day, 1; sent to Jacksonville, 5; at fever hospital, 2."

September 6: "Discharged, none; sent to Jacksonville, 11; admitted yesterday, 12; in camp to-day, 146."

Four "railroad" houses were sent from Way Cross to Camp Perry on the 7th, and 25 more have been contracted for, to be set up as soon as possible. These houses will be set up as soon as possible to take the place of the tents, and a large barrack is being constructed. The Supervising Surgeon-General will take temporary command of the camp until it shall be thoroughly equipped for the regular passage of refugees. One special train conveying refugees to Atlanta was sent before the passage of the prohibitory resolutions. Another special will go to Hendersonville, N. C., this week. This point has an elevation of 2,100 feet.

*Fernandina, Fla.*—Dr. Julius Wise, who was sent to Fernandina as inspector, reported, under date of September 1, as follows:

"Arrived at this place to-day and found sanitary condition as good as possible. There is no doubt that the case of Merriwether was not yellow fever."

*Way Cross, Fla.*—September 6 Dr. Posey reported, through Surgeon Hutton, that Gainesville, Palatka, and Orlando were healthy.

#### CONFERENCE AT AUGUSTA, GA.

[Telegram.]

AUGUSTA, GA., *September 3, 1888.*

At the suggestion of Governor Gordon, Surgeon-General Hamilton had a conference here to-day with the health authorities of several cities in the State and with the State health officers of Tennessee and Alabama, Governor Gordon being present, as also Mayor Lester, Dr. Brunner, and General Manager Haines, from Savannah, Ga., and Mayor Dunn, of Brunswick. At the conference the following telegram was read, which was received by the Surgeon-General:

"ATLANTA, GA., *September 3, 1888.*

"Surgeon-General J. B. HAMILTON (care Mayor, Augusta, Ga.):

"I am instructed to wire following resolutions adopted at noon to-day:

"*Resolved*, That the Board of Health of the City of Atlanta, his honor the mayor co-operating, cordially approves the plan of the Surgeon-General of the United States, requiring ten days' quarantine of all persons

from infected or suspected districts in Florida conveniently near to infected points.

*Resolved*, That the wholesale removal of persons from infected districts to populous cities and the aggregation of infected individuals in any part of this country is regarded as hazardous in a sanitary point of view, and is unjust to any community upon whom such persons are forced, because of the probable necessity of maintaining many of them at the corporate expense.

“JAMES M. BAIRD, *Secretary*.”

After discussion of these resolutions, the following resolutions were adopted by the conference:

*Resolved*, That this convention cordially approves the plan of the Surgeon-General of United States Marine-Hospital Service requiring ten days' quarantine of all persons from infected or suspected places, together with fumigation and other disinfection of baggage, &c., from infected points.

*Resolved*, That the wholesale removal of persons from infected districts to populous cities and the aggregation of individuals from infected places in any city of this country is regarded as extremely hazardous to any such community; also, that the citizens of Jacksonville have no just cause for complaint against the quarantine regulations as at present operated, inasmuch as abundant provision has been and will be made by establishing healthful and cleanly camps for the inhabitants of Jacksonville, and provision made for maintenance of such citizens during detention in camp.

*Resolved*, That, in the judgment of this convention, after the suspects shall have been detained in quarantine camp for ten days and their baggage shall have been fumigated under direction of United States Government, such persons should be permitted to go to any community willing to receive them.

An inspection of Camp Perry was made by the Surgeon-General on Tuesday.

*Nashville, Tenn.*—The president of the board of health telegraphed September 6: “Unless refugees have been in camp ten days, baggage disinfected, and each hold your certificate of health, they will not be admitted to State. The Augusta agreement is approved.”

*Atlanta, Ga.*—September 7 the secretary of the board of health telegraphs: “Atlanta relies upon the Camp Perry quarantine and the decision at Atlanta conference.”

*Macedlenny, Baker County, Fla.*—Mayor Reese of Montgomery, Ala., telegraphed September 7 as follows: “Our special agent reports 10 cases of yellow fever at Macedlenny; 1 death from black vomit. Pensacola and Marianna have quarantined against whole of Baker County. We will proceed to follow their example, and this only exemplifies the fact that the measures that you have already taken are right.” This town is on the F., R. and N. R. R., west of Jacksonville, between Baldwin and Lake City.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Sept. 1	1,533,804	831			1			15	23	23	16	17
Philadelphia, Pa.	Aug. 25	1,016,758	454			1			41	12	7		4
Philadelphia, Pa.	Sept. 1	1,016,758	352			1			24	3	5		3
Brooklyn, N. Y.	Sept. 1	793,960	353						12	4	4	1	6
Baltimore, Md.	Sept. 1	431,879	172						5	7	7		3
Boston, Mass.	Aug. 25	415,000	202						5		7		1
Boston, Mass.	Sept. 1	415,000	217								4		
San Francisco, Cal.	Aug. 24	330,000	120						3		2		2
Cincinnati, Ohio.	Sept. 1	255,139	105						12	5	5		3
Pittsburgh, Pa.	Sept. 1	230,000	97						8	2	2	1	3
Washington, D. C.	Sept. 1	225,000	113						6				5
Louisville, Ky.	Sept. 15	200,000	46						3				
Milwaukee, Wis.	Sept. 1	195,000	81						2		1		
Kansas City, Mo.	Sept. 1	180,000	37						3	1			
Minneapolis, Minn.	Aug. 31	180,000	65						4		1		
St. Paul, Minn.	Sept. 1	175,000	47						6		1		2
Rochester, N. Y.	Sept. 1	120,000	46						3				
Detroit, Mich.	Sept. 1	116,340	84						1	3	2		
Richmond, Va.	Sept. 1	100,000	33						3				
Denver, Colo.	Aug. 31	96,000	34						5		5		1
Columbus, Ohio.	Sept. 1	93,000	27						2				1
New Haven, Conn.	Aug. 25	82,000	30										1
New Haven, Conn.	Sept. 1	82,000	27						3				
Toledo, Ohio	Sept. 1	80,000	21						2				
Nashville, Tenn.	Sept. 1	65,153	14										
Fall River, Mass.	Sept. 1	65,000	35							1		1	
Charleston, S. C.	Sept. 1	60,145	37										
Cambridge, Mass.	Sept. 1	59,660	34						3		1		
Evansville, Ind.	Aug. 30	53,000	23								1		
Savannah, Ga.	Aug. 24	52,827	14								1		
Lynn, Mass.	Sept. 1	50,000	24										
Council Bluffs, Iowa.	Sept. 1	45,000	19						1				4
Manchester, N. H.	Sept. 1	41,000	17								1		
Mobile, Ala.	Sept. 1	40,000	15						1				
Portland, Me.	Sept. 1	40,000	9										
Galveston, Tex.	Aug. 24	40,000	13										
East Saginaw, Mich.	Sept. 1	33,000	13										
Burlington, Iowa	Aug. 29	30,166	6										
Davenport, Iowa.	Sept. 1	30,084	7								1		
Altoona, Pa.	Aug. 25	29,546	5										
Salem, Mass.	Sept. 1	29,000	17										
New Albany, Ind.	Aug. 31	28,689	8										
Yonkers, N. Y.	Sept. 1	27,500	12										
New Bedford, Mass.	Sept. 1	26,845	22										
Haverhill, Mass.	Sept. 1	25,000	8						1				
Jackson, Mich.	Sept. 1	22,500	7								1		1
Newton, Mass.	Sept. 1	21,105	13						1				
Newport, R. I.	Aug. 30	20,466	4										

JOHN B. HAMILTON,  
*Supervising Surgeon-General, Marine-Hospital Service.*





## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 37. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., September 14, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended September 14, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended August 25 corresponded to an annual rate of 18.1 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bristol, viz., 11.5, and the highest in Wolverhampton, viz., 28.7 a thousand. Small-pox caused 1 death in Oldham and 1 in Nottingham. Diphtheria caused 3 deaths in Manchester.

*London.*—One thousand four hundred and thirty-eight deaths were registered during the week, including measles, 47; scarlet fever, 21; diphtheria, 17; whooping-cough, 28; enteric fever, 7; diarrhœa and dysentery, 192; simple cholera and choleraic diarrhœa, 7. Diseases of the respiratory organs caused 172 deaths; different forms of violence, 47; and 9 suicides were registered. The deaths from all causes corresponded to an annual rate of 17.5 a thousand. In greater London 1,821 deaths were registered, corresponding to an annual rate of 17.2 a thousand of the population. In the "outer ring" the deaths included diarrhœa, 58; diphtheria, 8; and measles, 13.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended August 25 in the 16 principal town districts of Ireland was 17.5 a thousand of the population. The lowest rate was recorded in Lisburn, viz., 4.8, and the highest in Wexford, viz., 29.9 a thousand. In Dublin 121 deaths were registered, including measles, 3; enteric fever, 2; scarlet fever, 1; diarrhœa, 4.

*Scotland.*—The deaths registered in 8 principal towns during the week ended August 25 corresponded to an annual rate of 16.7 a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Aberdeen, viz., 13.5, and the highest in Paisley, viz., 21.1 a thousand. The aggregate number of deaths registered from all causes was 421, including measles, 5; scarlet fever, 4; diphtheria, 3; whooping-cough, 4; fever, 10; and diarrhœa, 16.



## UNITED STATES.

*Lake City, Fla.*—Dr. J. L. Posey arrived at Lake City August 23, and in his report to the Supervising Surgeon-General, dated September 1, 1888, states that—

Lake City is the county seat of Columbia County, situated in Middle Florida, with an elevation of 250 feet above sea-level. The city covers an area of one-half mile square, its center rising to an elevation of 17 feet and sloping from east to west, with an average fall of 5 feet, giving an almost perfect natural surface drainage, the water being rapidly carried off after the heaviest rain-falls, which are of rare occurrence in this locality. There are three small fresh-water lakes in the immediate vicinity of the city, viz., Lake Hamburg in the southwest, Lake De-Soto east, and Lake Isabella, the largest and prettiest of the trio, southeast of the city. The latter named is about 1 mile wide and of considerable depth, and is the source whence the city derives its water-supply for public uses. The water almost exclusively used for drinking purposes is supplied by wells, which yield an abundance of clear, cool water at a depth of from 20 to 30 feet. I visited the city water-works recently erected, located on the shore of Lake Isabella, and examined the large cemented brick reservoir, into which the water is first pumped from the lake, and, after filtering through a bed of charcoal, is forced into a wooden tank elevated at a considerable height, and thence distributed through iron mains to hydrants placed 210 feet apart. The water of Lake Isabella is clear, cool spring-water, odorless, tasteless, and apparently free from organic matter. Mr. Collins, the president of the water-works company, informed me that an analysis had been made by a competent chemist, and the water found free from organic matter. I deem it perfectly wholesome, and fit for drinking purposes.

A general and thorough inspection and survey of Lake City revealed an excellent sanitary condition of its streets and drains, as also of the premises. The municipal health board had just completed a general cleaning and disinfection of the closets, which are open and on the surface of the soil, which is a sandy loam with a substratum of clay. The fecal accumulations were removed beyond the corporate limits and put into a large trench, being thoroughly disinfected with lime. The garbage from premises and streets likewise removed beyond the corporate limits, and after saturation with resinous matter entirely burned.

The quarantine measures established against infected points (this city being only 60 miles by rail north from Jacksonville) are efficient and stringent, and are rigidly enforced by the city board, composed of gentlemen of intelligence and ability, who are deeply impressed with the conviction that the only means of escaping an invasion of yellow fever is by maintaining a strictly military quarantine. In addition to these measures, a weekly house-to-house inspection has been ordered, to compel residents to preserve the present fine sanitary condition of the city. They are required to disinfect their closets once or twice a week with a saturated solution of sulphate of iron and carbolic acid.

At the date of my inspection, I met the president of the city health board and the principal physicians practicing there, and was afforded every facility for making a complete investigation of its sanitary state. They all assured me that there was not at that time, or had been pre-

vicious, a single case of yellow fever, or any case that they deemed suspicious—in fact, not even a case of any type of malarial disease.

A type of malarial remittent fever prevails in some of the alluvial lands, which the natives call "yellow disease," and which is an aggravated form of hæmaturia, usually fatal, and occurring in persons who have been the subjects of repeated attacks of intermittent fever, who have become cachectic and leucocythæmic.

I subjoin a few notes giving the data requested in your letter of instructions:

Name of mayor Lake City, W. R. Bush. Health officer, Dr. D. A. Watts. Water-supply, well-water and lake-water. Disposal of sewage, surface drainage. Burial permits, none issued. Distance of cemetery from business center, one-half mile; mode of interment, six feet below surface. Number of deaths from May 1 to October 1, 1887, 8; number of deaths from May 1 to August 24, 1888, 5—total, 13. Population (white and colored), estimated at 2,000.

In conclusion, I desire to state that, from the conditions of soil, elevation, and general cleanliness of Lake City, I am of the opinion that the occurrence of a case of yellow fever in its limits would, upon immediate isolation, fail to establish a focus for the development of an epidemic atmosphere or rapid spread of the specific infecting matter of yellow fever. The statements of the oldest resident practitioners and other residents tend to corroborate this view, as 2 cases of yellow fever occurred in 1876 in the city, which were clearly traced to importation, both cases resulting in recovery and no other cases developing from them. During a period of twenty-five years there has not been an epidemic of any disease prevailing in Lake City. A few cases of cholera occurred in 1867, without any tendency to develop an epidemic. In face of such a health record, I entertain the firm conviction that this charming City of the Lakes is justly entitled to be ranked as one of the most salubrious of the cities of Middle Florida. The average temperature, I think, is about 75° Fahr.; the nights and mornings, at the time of my visit, delightfully cool and invigorating, and, during the noon and afternoon, cool, balmy breezes sweep over its richly-wooded hills of pine, oak, and magnolia. I submit this brief sketch of the sanitary conditions of the attractive City of the Lakes as the result of close personal observation and thorough inspection of its situation and surroundings.

*Tampa, Fla.*—Dr. J. P. Wall telegraphed as follows:

September 8: "Three cases reported to-day, making 7 since last report. It continues mild. No deaths."

September 9: "One new case here. No deaths."

*Manatee, Fla.*—Dr. M. B. Harrison reports for the week ended September 7: Three new cases for Manatee, and 2 for Palmetto—total, 51. No deaths.

*Jacksonville, Fla.*—Dr. Neal Mitchell, president of the board of health, telegraphed as follows:

September 9: "For 24 hours ending 6 p. m.: New cases, 49; deaths, 7. Total number of cases to date, 604; total number of deaths to date, 73."



September 10: "For 24 hours ending 6 p. m.: New cases, 32; deaths, 5. Total number of cases to date, 636; total number of deaths to date, 78."

September 11: "For 24 hours ending 6 p. m.: New cases, 48; deaths, 11. Total number of cases to date, 684; total number of deaths to date, 90."

September 12: "For 24 hours ending 6 p. m.: New cases, 59; deaths, 10. Total number of cases to date, 743; total number of deaths to date, 100."

September 13: "For 24 hours ending 6 p. m.: New cases, 44; deaths, 4. Total number of cases to date, 785; total number of deaths to date, 104."

*Camp Perry, Fla.*—The Secretary of the Treasury has received the following telegrams from Supervising Surgeon-General Hamilton:

September 10: "Arrived to-day, 1 p. m. Refugees in camp, 132; in fever hospital, 4. Died at fever hospital, 1. Four officers present."

September 12: "Morning report: Officers, 5; guards, 7; employés, including carpenters, 59. Refugees received, 16; discharged, 64; remaining, 86. In fever camp, 6 patients."

## MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Variceloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
New York, N. Y.	Sept. 8.	1,534,676	716	.....	.....	.....	.....	1	.....	17	19	18	8
Chicago, Ill.	Sept. 8.	800,000	291	.....	.....	.....	.....	.....	.....	14	2	19	1
Baltimore, Md.	Sept. 8.	431,879	177	.....	.....	.....	.....	.....	.....	9	1	3	.....
Boston, Mass.	Sept. 8.	415,000	175	.....	.....	.....	.....	.....	.....	2	1	5	.....
San Francisco, Cal.	Aug. 31.	330,000	114	.....	.....	.....	.....	.....	.....	1	.....	2	.....
Cincinnati, Ohio.	Sept. 8.	255,139	93	.....	.....	.....	.....	.....	.....	3	.....	1	.....
New Orleans, La.	Sept. 1.	248,000	114	.....	.....	.....	.....	.....	.....	2	.....	10	.....
Pittsburgh, Pa.	Sept. 8.	230,000	70	.....	.....	.....	.....	.....	.....	7	.....	1	.....
Washington, D. C.	Sept. 8.	225,000	83	.....	.....	.....	.....	.....	.....	3	.....	1	.....
Milwaukee, Wis.	Sept. 8.	195,000	82	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Minneapolis, Minn.	Sept. 7.	180,000	48	.....	.....	.....	.....	.....	.....	1	.....	1	.....
Kansas City, Mo.	Sept. 8.	180,000	38	.....	.....	.....	.....	.....	.....	5	.....	1	.....
St. Paul, Minn.	Sept. 8.	175,000	41	.....	.....	.....	.....	.....	.....	9	.....	2	.....
Rochester, N. Y.	Sept. 8.	120,000	47	.....	.....	.....	.....	.....	.....	3	.....	1	.....
Detroit, Mich.	Sept. 7.	116,340	.....	.....	.....	.....	.....	.....	.....	4	.....	2	.....
Denver, Colo.	Sept. 7.	96,000	37	.....	.....	.....	.....	.....	.....	7	.....	1	.....
Columbus, Ohio.	Sept. 8.	93,000	30	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
New Haven, Conn.	Sept. 8.	82,000	21	.....	.....	.....	.....	.....	.....	4	.....	.....	.....
Toledo, Ohio.	Sept. 8.	80,000	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nashville, Tenn.	Sept. 8.	65,153	19	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Fall River, Mass.	Sept. 8.	65,000	24	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
Charleston, S. C.	Sept. 8.	60,145	43	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Cambridge, Mass.	Sept. 8.	59,660	34	.....	.....	.....	.....	.....	.....	1	.....	1	.....
Evansville, Ind.	Sept. 6.	53,000	21	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Savannah, Ga.	Sept. 7.	52,827	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lynn, Mass.	Sept. 8.	50,000	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mobile, Ala.	Sept. 8.	40,000	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Galveston, Tex.	Aug. 31.	40,000	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portland, Me.	Sept. 8.	40,000	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
East Saginaw, Mich.	Sept. 8.	33,000	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Davenport, Iowa.	Sept. 8.	30,084	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Altoona, Pa.	Sept. 1.	29,546	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salem, Mass.	Sept. 8.	29,000	15	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
New Albany, Ind.	Sept. 8.	28,689	11	.....	.....	.....	.....	.....	.....	1	2	.....	.....
Yonkers, N. Y.	Sept. 10.	28,000	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford, Mass.	Sept. 8.	26,845	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Auburn, N. Y.	Sept. 1.	26,000	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Auburn, N. Y.	Sept. 8.	26,000	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Haverhill, Mass.	Sept. 8.	25,000	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jackson, Mich.	Sept. 8.	22,500	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Newton, Mass.	Sept. 8.	21,105	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Poughkeepsie, N. Y.	Sept. 8.	21,000	16	.....	.....	.....	.....	.....	.....	.....	.....	1	1
Newport, R. I.	Sept. 6.	20,466	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Brunswick, N. J.	Sept. 8.	20,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

By order of the Supervising Surgeon-General:

GEO. W. STONER,  
Surgeon, Marine-Hospital Service.

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 38. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,

U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., September 21, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended September 21, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended September 1 corresponded to an annual rate of 17.5 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bristol, viz., 11.5, and the highest in Leeds, viz., 25.3 a thousand. Small-pox caused 2 deaths in Preston. Diphtheria caused 3 deaths in Manchester, 2 in Portsmouth, and 2 in Newcastle-upon-Tyne.

*London.*—One thousand three hundred and forty-two deaths were registered during the week, including measles, 39; scarlet fever, 15; diphtheria, 23; whooping-cough, 24; enteric fever, 10; diarrhoea and dysentery, 144; simple cholera and choleraic diarrhoea, 2. Diseases of the respiratory organs caused 130 deaths; different forms of violence, 53; and 4 suicides were registered. The deaths from all causes corresponded to an annual rate of 16.4 a thousand. In greater London 1,644 deaths were registered, corresponding to an annual rate of 15.5 a thousand of the population. In the "outer ring" the deaths included diarrhoea, 40; whooping-cough, 7; and scarlet fever, 5.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended September 1 in the 16 principal town districts of Ireland was 17.1 a thousand of the population. The lowest rate was recorded in Waterford, viz., 2.3, and the highest in Wexford, viz., 21.4 a thousand. In Dublin 138 deaths were registered, including enteric fever, 6; scarlet fever, 2; diarrhoea, 7; typhus, 1; whooping-cough, 2.

*Scotland.*—The deaths registered in 8 principal towns during the week ended September 1 corresponded to an annual rate of 16.1 a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Greenock, viz., 12.2, and the highest in Paisley, viz., 27.8 a thousand. The aggregate number of deaths registered from all

causes was 407, including measles, 5; scarlet fever, 5; diphtheria, 2; whooping-cough, 3; fever, 4; and diarrhœa, 25.

*Marseilles, France.*—The United States consul reports, under date of August 31, that "the health of the city continues to be excellent for the season. No epidemic of any kind is known to exist." Seven hundred and one deaths were registered during the month of August, 1888, including small-pox, 9; enteric fever, 57; and diphtheria and croup, 24.

*Cardenas, Cuba.*—The United States consular report dated September 7, 1888, states that "in town and harbor good health prevails."

*Maceio, Brazil.*—Thirty-two deaths were registered during the month of July, 1888, including 1 from small-pox.

*Nassau, N. P.*—The United States consular report dated September 8, 1888, states that "city healthy. Weather very sultry, with much rain. Strict quarantine against Florida ports."

*Acapulco, Mexico.*—One death from small-pox and 1 from enteric fever were registered during the month of August, 1888.

*Havana, Cuba.*—Seventeen deaths from yellow fever and 2 from small-pox were reported during the week ended September 6, 1888.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris .....	Sept. 1.....	2,260,945	853			2	17	1	14	14
Glasgow .....	Sept. 1.....	545,678	176				1	4	1	
Warsaw .....	Aug. 25.....	444,814	224			4			5	
Calcutta .....	Aug. 4.....	433,219	193	12		1			1	
Amsterdam .....	Sept. 1.....	389,916	117				1		2	5
Munich .....	Aug. 18.....	275,000	187						1	
Palermo .....	Sept. 1.....	250,000	82						1	
Belfast .....	Sept. 1.....	227,022	84				2			
Genoa .....	Sept. 1.....	179,750	87			1				1
Trieste .....	Aug. 25.....	154,500	71			1				3
Toronto .....	Sept. 8.....	130,000	25				1			2
Stuttgart .....	Sept. 1.....	125,510	41							1
Bremen .....	Aug. 25.....	122,000	51							
Havre .....	Sept. 1.....	112,074	74				9			1
Pernambuco .....	Aug. 7.....	110,000	97				2	2	1	
Pernambuco .....	Aug. 14.....	110,000	79				3	1	3	
Pernambuco .....	Aug. 21.....	110,000	80					1	2	
Barmen .....	Sept. 1.....	109,000	35							
Leghorn .....	Sept. 2.....	101,854	35							
Mayence .....	Aug. 18.....	65,802	26				1			
Cadiz .....	Sept. 1.....	65,028	47							
Merida .....	Sept. 10.....	48,832	29							
Vera Cruz .....	Sept. 6.....	23,800	23							
Gibraltar .....	Aug. 26.....	23,631	11							
Gibraltar .....	Sept. 2.....	23,631	12							1
Kingston, Canada .....	Sept. 14.....	16,216								
St. Thomas .....	Aug. 24.....	13,500	40							
St. Thomas .....	Aug. 31.....	13,500	42				1			
Cartagena, U. S. of Colo.....	Aug. 18.....	13,000	9							
Cartagena, U. S. of Colo.....	Aug. 25.....	13,000	13							
Matamoras .....	Sept. 1.....	12,000	9							
San Juan del Norte .....	Aug. 20.....	500								
San Juan del Norte .....	Aug. 27.....	500	1							

## UNITED STATES.

*Fernandina, Fla.*—The following report has been received under date of September 10:

I thought best to write you of the situation here as regards the fever. I feel positive we have the fever here, and that it has been here since the 1st of August. On the 14th of August we had the first post-mortem, on the body of one Mrs. Buck. All the physicians were in attendance (five in number). I was told in the morning of that day by Dr. Starbuck that Mrs. B. died with all the symptoms of yellow fever and black-vomit.

The post-mortem was at 10 a. m., Dr. Horsey operating. I will give you a brief account of what we found. The woman was about 60 years of age, light hair and skin, blue eyes, short and rather fat. The woman lay just as she had died a few hours before, with a large quantity of black-vomit, just as she had thrown it off, by the side of her head on the pillow and bedding. On making the incision the adipose tissue was found to be very yellow. Stomach empty, except a little mucus. Liver enlarged, very dark, and heavily congested. Gall-bladder nearly filled with gall-stones. Spleen very dark and softened, indicating a high degree of inflammatory action. The liver, the doctors said, did not have the box-wood color, and on that they seemed to hinge their opinion that it was not yellow fever. The left lobe of liver externally was much changed in color, faded out—the liver color was gone.

Now to the stomach. Was this black-vomit true black-vomit, or from some other source, and not from the stomach? On very casual examination of the stomach, the hæmorrhagic points were most plain to be seen. There was no mistaking them, making the case, to my mind, very clearly one of genuine yellow fever. I went direct to my office and consulted the authorities, and could only come more firmly convinced of my former opinion that this was a genuine case, and so reported to the board of health. Their report (the doctors') was impaction of gall-stones. I was then asked if I would not hold my opinion, as I was one against four. I promised the president of the board that I would do so until further developments. The fever commenced to spread from that point of infection until many have been sick, and deaths are very frequent for our little healthy town.

At that post-mortem I contracted the fever, as having not been among it before, giving me a most excellent opportunity to diagnose the case. My case was quite light, though the symptoms were well marked—primary and secondary fever, much disturbance at the stomach. It is now eleven days, and I am not well yet. I felt much as I did after having variola. \* \* \* In the Tourists' Hotel, 7 cases were down at once, all in the house but the colored servants.

Two cases of this fever went from the hotel aboard the last Mallory steamer leaving the port, and why has the Mallory Line withdrawn but for the well-grounded suspicion or actual knowledge of this scourge.

From the hotel I spoke of, our postmaster died, under most suspicious circumstances—only out of the office for three or four days. The local paper says he died of hæmorrhage of the stomach. This case, from what I hear, I have no doubt was a genuine case of fever, from my personal acquaintance with the man and circumstances. I being sick at the time Dr. Wise was here, did not get to see him. I see his report was simply on the sanitary condition of the town, which was very good.



I believe very sincerely, Doctor, that we have the fever here, and could not refrain from stating the case to you as I view it. I find many who coincide with my views, one nurse who was here in 1877 in the epidemic.

Just recently from a labor riot, the State troops from Orlando, Gainesville, Ocala, and Starke are here from those healthy interior towns, and are now or soon will disband and go to their homes, and, as I feel sure, will carry death and destruction with them.

*Live Oak, Fla.*—Dr. J. L. Posey, sanitary inspector, reported under date of September 13 as follows:

#### LIVE OAK, FLA.

In pursuance with your order of the 20th of August, I made a thorough sanitary investigation of the town of Live Oak, Fla. This town is situated in the northern part of the State, and is the county seat of Suwanee County, and is the junction of the F., S. and W. and F., R. and N. Co.'s railroads. Its general sanitary state is not very good, as the local health officers had only adopted partial measures to improve its condition. The soil is a sandy loam, somewhat hilly, and the surrounding forests composed of pine and oak. Its area covers  $1\frac{1}{2}$  miles square, and the dwellings at an ample distance from each other. The removal of garbage and fecal matter has been partly practiced, and the usual disinfectants employed. The quarantine methods are effective, and are rigidly enforced, and the authorities fully impressed that its establishment and continuance are the best means of excluding the contagion of yellow fever. This point is also guarded by the Government quarantine officer in charge of the fumigating station, which has been recently removed there from Du Pont, Ga. The health of the community was good at the period of my inspection, although the existence of several ponds of stagnant water in the central part of the town should occasion a miasmatic condition of the atmosphere and the prevalence of intermittent and remittent fevers. The local practitioners of medicine whom I met informed me that they found all forms of malarial fevers yield readily to treatment, and were only called on casually, to treat cases of hæmaturia. In 1876, two cases of yellow fever were imported from Savannah, Ga., both of which resulted in death, without the occurrence of any other cases. There has not been since its incorporation any epidemic of cholera, small-pox, or other contagious and infectious diseases.

In closing, I beg leave to submit the following notes obtained from the mayor of the town: Name of mayor and health officer, Dr. W. J. Carroll; water-supply, cisterns; disposal of sewage, surface drainage; burial-permits, none issued; distance of cemetery from business center, 4 miles; number of deaths from May 1 to October 1, 1887, 20; population (estimated), 1,100.

No accurate record of vital statistics is kept in any of the smaller towns, and the information obtained is not very reliable. The undertaker is the only source whence the mortuary tables are to be obtained.

#### LAKE CITY JUNCTION, FLA.

I have inspected Fort White, known as Lake City Junction, situated on the line of the Savannah, Florida and Western Railroad, in

the northern section of the State of Florida. This is a newly-incorporated town, sparsely settled, and built on a dry, sandy soil, with a substratum of clay, the forest-trees being pine and oak. The local health authorities have been very active in placing their town in a good sanitary condition. The garbage has been removed from streets and premises outside the town limits, and after saturation with pine-tar destroyed by fire. The excreta from open closets have been taken a mile from the corporation and placed in a large trench, the contents being thoroughly limed and deodorized with sulphate of iron. The open closets have been thoroughly disinfected with a similar saturated solution of copperas and crude carbolic acid. There is no system of sewerage, but a naturally good surface drainage owing to the undulating character of the soil, and this has been somewhat improved by cleaning out the street-drains emptying into small creeks adjoining the town. The water-supply for drinking and domestic purposes is obtained from wells and cisterns. An indifferent quality of water is procured from wells at a depth of from 20 to 30 feet, but a purer and better water is obtained from bored wells at a depth of 100 feet or more. I have been unable to obtain any accurate data of the average temperature and rain-fall as no record is kept. The quarantine regulations established by the county and municipal health boards have been in force since the announcement of the epidemic at Jacksonville, and against all other infected points. The system of train-inspection is efficient, and every passenger is required to show a satisfactory health-certificate from his point of departure before he is permitted to leave the train. The general health at the time of my inspection and previous thereto was and has been good, and from interviews with resident physicians I learned that only a few cases of the milder forms of malarial fever were prevalent. There is no history of the existence of yellow fever in former years, or of any other contagious diseases, and from the statement given by the mayor, Doctor Vincent, the death rate is very low.

The following data were given me by Doctor Vincent: Mayor and health officer, Dr. G. M. Vincent; water-supply, cisterns and wells; disposal of sewage, surface drainage; burial-permits, issued by mayor; distance of cemetery from business center,  $\frac{1}{2}$  mile; number of deaths from May 1 to October 1, 1887, 3; population (white and colored), 300.

*Refugee train from Jacksonville and Camp Perry, Fla., to Hendersonville, N. C.—Removal of people from infected places to mountainous regions—Extensive permanent quarters with standing garrison of acclimated persons and specially fitted trains necessary.*

Passed Assistant Surgeon John Guit  ras, of the Marine-Hospital Service, reports to Surgeon-General Hamilton as follows:

CAMP PERRY, FLA., September 16, 1888.

SIR: I have the honor to report as follows concerning the excursion train of refugees from Jacksonville and Camp Perry to Hendersonville, N. C.:

The train left Jacksonville on the morning of the 11th instant, and was joined by myself and the Camp Perry contingent at Folkston, Ga., making, in all, a total of 291 souls.

It was found that no keys had been furnished to lock the cars, and this evil it was found impossible to correct by applying to the railroad authorities, on account of the variety of cars furnished.

Unfortunately the trip was prolonged beyond the time anticipated, on account of several accidents on the road. These perhaps might have been provided for with greater promptitude by the railroad authorities had they fully recognized the gravity of the situation.

The evils resulting from this delay were twofold. First, the running short of rations. This was provided for to a great extent, sometimes by the generosity and others by the cupidity of the towns along the road. Some parties at Atlanta and Macon generously furnished relishes, while others charged exorbitant prices. I must mention, however, the most conspicuous example of generosity. This was shown by the town of Easley, S. C., which provided, without any charges, and late in the night, the most abundant assortment of supplies.

The second and most important consequence of delay was the development of cases of yellow fever on the train. Only two cases developed in the first twenty-four hours, and three in the course of the second day. Of course it was to be expected that this would happen in an aggregation of people leaving Jacksonville; but it is very probable that the accumulation of people, clothes, and baggage for so long a time in hot cars, which could not be kept in a sanitary condition, created a secondary center of infection that will show itself in the development of cases after the arrival in Hendersonville.

The appearance of yellow fever among the refugees had a very unfavorable effect upon the *morale* of the party. They were truly panic-stricken. One car quarantined strictly against the other, and efforts to escape were frequently made, and, unfortunately, in a few instances with success.

One lady was taken with labor-pains in the train, and, with the consent of a local physician, she was allowed to remain at White Sulphur Springs, near Gainesville, Ga.

A marked contrast was apparent between the two cars occupied by the refugees from Camp Perry and the rest of the train. Among the former no cases of yellow fever occurred, and the *morale* was excellent. These two cars were strictly quarantined against the rest. No complaint was heard, no fear expressed. In the other cars the spectacle was pitiful. The isolation of the sick in one car I discovered would have increased the excitement by bringing together and crowding still more people from the different cars who were suspicious of each other.

Great credit is due to that portion of the refugees who gave me their support throughout the journey. It was owing to their kind firmness that we had no decided breach of discipline.

We arrived at Hendersonville on the 13th, at 2 o'clock a. m. The hospitality of that generous people became at once apparent. They had been up all night preparing a building for the reception of the sick. Fires were built around the station, adding warmth and cheerfulness to the cordiality of the reception. With the assistance of Dr. Few, of Hendersonville, the patients were removed to the hospital. The refugees found accommodation at very reasonable rates.

On the morning of the arrival a sixth case of yellow fever developed. The comparatively large proportion of cases has caused much excitement, and it is probable that some of the refugees will break their parol.

It is apparent from the above facts that the experiment of excursions insisted upon by the people of Jacksonville is not a success. There is, of course, a possibility that Hendersonville may become a center of infection, but I do not expect this to happen. The large proportion

of cases taken sick during the journey renders the measure one of questionable advantage to the people of Jacksonville, let alone the hardships of the journey.

The removal of a large portion of an infected population to high altitudes, where yellow fever spreads with difficulty, is a desirable object, and appears perfectly practicable if the health department of the nation was endowed with the same liberality as the Army and Navy. Such action would necessitate the existence of extensive permanent quarters in the mountainous regions, with a standing garrison of acclimated people; the fitting out of special trains exclusively under the control of the Government, and constructed specially for that purpose. These encampments and deposits of sanitary stores should be ever ready for action, in the same manner that the strategic points are maintained in readiness at great expense by military authorities. Provision should be made also for the constant training of a standing sanitary corps, by setting the machinery in motion during seasons when there are no epidemics, as is done in military and naval reviews and exercises.

I have the honor to submit the above report for your consideration.

Very respectfully, your obedient servant,

JOHN GUITÉRAS,

*Passed Assistant Surgeon, M.-H. S.*

CAMP PERRY, FLA., September 16, 1888.

The foregoing report is approved.

JOHN B. HAMILTON,

*Supervising Surgeon-General, M.-H. S.*

*San Rafael, Ariz.*—Deputy Collector Chalmers, in his report through Collector Magoffin, dated September 11, states that "there is a malignant type of small-pox at this port, which is rapidly spreading on the American side of the line. It is known as the black small-pox, and about one-half of the cases so far have been fatal. The disease is fast spreading, and will most likely reach Harshaw and Crittenden soon. The Tucson authorities have taken the matter in hand and have asked for a quarantine. The disease has now spread a great way, and is in every house in town with the exception of the residence of Mr. Harrison and the custom-house."

*Tampa, Fla.*—Dr. J. P. Wall, president of the board of health, in his report dated September 7, stated that "we are still having some cases of yellow fever, generally of a mild type. Not so much of the dengue now. No deaths since 14th of August. There has been no sickness in Plant City for some time—since I last reported any there."

*St. Mark's, Fla.*—Inspector W. W. Cottrell, in his report through the collector of customs, dated September 8, states that "at St. Mark's they have a very rigid quarantine against all ports south of here, and will allow none to land without proper certificates from health officers."



*Camp Perry, Fla.*—The Secretary of the Treasury has received the following telegrams from Supervising Surgeon-General Hamilton:

September 13. "Morning report: Present—officers, 5; guards, 7; employés, including carpenters, 53; refugees, 99. Discharged, 6; arrived, 13; in fever camp, 5. Camp greatly improved. Will be able to discharge a number of employés in a day or two. Town of Macclenny, in Baker County, had to have medicine sent from Savannah. None in the place. Physician sent by Savannah."

September 14: "Morning report: Present—officers, 5; guards, 7; employés, including carpenters, 52; refugees, 98. In fever camp, 5. All well here. Medical supplies sent to Macclenny from Savannah yesterday."

\* September 15: "Morning report: Present—officers, 5; guards, 9; employés, 45; refugees, 105. Discharged, 16; in fever camp, 2. Sanitary-Inspector Posey taken sick last night."

September 17: "Morning report: Present—officers, 7; guards, 10; employés, 49; refugees, 118. Discharged, 3; in fever camp, 3. Dr. Posey has yellow fever, contracted at Macclenny. Three cases are reported at Gainesville, and there are rumors of cases at Wellborn and Fernandina. Have sent Wise to investigate. Dr. Guitéras returned Saturday night. Refugees had great hardships on special train, and the whole sea-board is alarmed on account of these refugees breaking their parol at Hendersonville. I do not think it advisable to send any more special trains. Camp in excellent condition, but needs enlargement. This is being done as rapidly as possible. Those here are comfortable, and reasonably happy."

September 18: "Morning report: Present—officers, 7; guards, 10; employés, including carpenters, 51; refugees, 145; in fever camp, 3."

September 19: "Morning report: Present—officers, 6; guards, 10; employés, 52, including carpenters; refugees, 165. Discharged, 5. Dr. Posey reported better. In camp, 4. I am satisfied there is fever in Fernandina."

Surgeon Hutton telegraphed as follows:

September 20: "Morning report: Present—officers, 6; guards, 10; employés, including carpenters, 51; in fever camp, 4. Refugees arrived, 21; discharged, 4; remaining, 176.

September 21: "Morning report: Present—officers, 6; guards, 10; employés, 51. Refugees arrived, 21; discharged, 8; remaining, 189. In fever camp, 5. Posey recovered."

*Galveston, Tex.*—Passed Assistant Surgeon W. J. Pettus, Marine-Hospital Service, telegraphed as follows:

September 20: "There is no yellow fever in Galveston. The report was without foundation."



*Louisville, Ky.*—Surgeon John Godfrey, in charge of the Marine-Hospital Service, telegraphed as follows:

September 20: "Man died yesterday of yellow fever; refugee from Decatur. Precautions taken. No danger apprehended."

*Mobile, Ala.*—Dr. Rhett Goode telegraphed as follows:

September 20: "Reliable reports of 3 cases at Jackson, Miss.; 10 at Decatur, Ala.; 1 at Louisville, Ky."

*Jacksonville, Fla.*, September 21: Total number of cases reported to date, 1,582; total, deaths, 196.

No official daily bulletins have been received from Jacksonville since September 13.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Varicoid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
New York, N. Y.	Sept. 15.	1,535,548	736	.....	1	.....	.....	.....	19	17	12	8	13
Philadelphia, Pa.	Sept. 8.	1,016,758	365	.....	.....	.....	.....	.....	27	2	7	1	12
Baltimore, Md.	Sept. 15.	431,879	152	.....	.....	.....	.....	.....	7	.....	1	.....	.....
Boston, Mass.	Sept. 15.	390,595	212	.....	.....	.....	.....	.....	3	.....	5	.....	4
San Francisco, Cal.	Sept. 7.	330,000	103	.....	.....	2	.....	.....	2	.....	1	.....	.....
Cincinnati, Ohio.	Sept. 15.	255,139	90	.....	.....	.....	.....	.....	4	.....	4	.....	12
Pittsburgh, Pa.	Sept. 15.	230,000	67	.....	.....	.....	.....	.....	5	2	6	.....	.....
New Orleans, La.	Sept. 8.	248,000	123	.....	.....	.....	.....	.....	1	.....	8	.....	4
Washington, D. C.	Sept. 17.	225,000	108	.....	.....	.....	.....	.....	11	1	4	.....	4
Louisville, Ky.	Sept. 15.	200,000	49	.....	.....	.....	.....	.....	4	.....	.....	.....	.....
Milwaukee, Wis.	Sept. 15.	195,000	72	.....	.....	.....	.....	.....	1	1	.....	.....	1
Minneapolis, Minn.	Sept. 15.	180,000	75	.....	.....	.....	.....	.....	6	1	3	.....	.....
Kansas City, Mo.	Sept. 15.	180,000	32	.....	.....	.....	.....	.....	4	.....	1	.....	.....
Rochester, N. Y.	Sept. 15.	120,000	50	.....	.....	.....	.....	.....	3	.....	.....	.....	.....
Detroit, Mich.	Sept. 15.	116,340	101	.....	.....	.....	.....	.....	3	.....	6	.....	2
Richmond, Va.	Aug. 25.	100,000	39	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Richmond, Va.	Sept. 1.	100,000	36	.....	.....	.....	.....	.....	3	.....	1	.....	.....
Denver, Colo.	Sept. 14.	96,000	42	.....	.....	.....	.....	.....	1	.....	5	.....	.....
Columbus, Ohio.	Sept. 14.	93,000	25	.....	.....	.....	.....	3	.....	.....	.....	.....	1
New Haven, Conn.	Sept. 15.	82,000	36	.....	.....	.....	.....	.....	3	.....	.....	.....	.....
Toledo, Ohio.	Sept. 15.	80,000	18	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Nashville, Tenn.	Sept. 15.	65,153	27	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Fall River, Mass.	Sept. 15.	65,000	43	.....	.....	.....	.....	.....	1	2	1	1	.....
Charleston, S. C.	Sept. 15.	60,145	32	.....	.....	.....	.....	.....	2	.....	1	.....	1
Evansville, Ind.	Sept. 15.	53,000	21	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Savannah, Ga.	Sept. 14.	52,827	19	.....	.....	.....	.....	.....	.....	.....	.....	1	1
Lynn, Mass.	Sept. 15.	50,000	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Council Bluffs, Iowa.	Sept. 15.	45,000	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Mobile, Ala.	Sept. 15.	40,000	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Galveston, Tex.	Sept. 7.	40,000	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
East Saginaw, Mich.	Sept. 15.	33,000	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Burlington, Iowa.	Sept. 12.	30,166	5	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Altoona, Pa.	Sept. 8.	29,546	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salem, Mass.	Sept. 15.	29,000	10	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
New Albany, Ind.	Sept. 15.	28,689	8	.....	.....	.....	.....	1	1	.....	1	.....	.....
New Bedford, Mass.	Sept. 15.	26,845	14	.....	.....	.....	.....	.....	2	.....	.....	.....	.....
Auburn, N. Y.	Sept. 18.	26,000	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Haverhill, Mass.	Sept. 15.	25,000	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jackson, Mich.	Sept. 15.	22,500	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Poughkeepsie, N. Y.	Sept. 14.	22,000	10	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
Newton, Mass.	Sept. 15.	21,105	7	.....	.....	.....	.....	.....	1	.....	.....	.....	.....

By order of the Supervising Surgeon-General:

GEO. W. STONER,  
Surgeon, Marine-Hospital Service.



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 39. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., September 28, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended September 28, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended September 8 corresponded to an annual rate of 17.8 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bristol, viz., 12.7, and the highest in Norwich, viz., 25.1 a thousand. Diphtheria caused 2 deaths in Manchester, 2 in Brighton, and 3 in Newcastle-upon-Tyne.

*London.*—One thousand three hundred and sixteen deaths were registered during the week, including measles, 26; scarlet fever, 19; diphtheria, 18; whooping-cough, 32; enteric fever, 11; diarrhoea and dysentery, 131; simple cholera and choleraic diarrhoea, 3. Diseases of the respiratory organs caused 148 deaths; different forms of violence, 32; and 3 suicides were registered. The deaths from all causes corresponded to an annual rate of 16.0 a thousand. In greater London 1,630 deaths were registered, corresponding to an annual rate of 15.4 a thousand of the population. In the "outer ring" the deaths included diarrhoea, 33; whooping-cough, 5; scarlet fever, 6; measles, 7.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended September 8 in the 16 principal town districts of Ireland was 19.5 a thousand of the population. The lowest rate was recorded in Londonderry, viz., 12.5, and the highest in Armagh, viz., 41.3 a thousand. In Dublin 147 deaths were registered, including measles, 1; enteric fever, 2; scarlet fever, 2; diarrhoea, 11; whooping-cough, 2; diphtheria, 1; dysentery, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week ended September 8 corresponded to an annual rate of 16.0 a thousand of

the population, which is estimated at 1,314,274. The lowest mortality was recorded in Greenock, viz., 7.4, and the highest in Paisley, viz., 21.9 a thousand. The aggregate number of deaths registered from all causes was 405, including measles, 8; scarlet fever, 6; diphtheria, 7; whooping-cough, 6; fever, 2; and diarrhœa, 22.

*Cardenas, Cuba*.—September 14: "Good health in town and harbor."

*Nassau, N. P.*—September 15: "Weather hot and rainy. City healthy."

*Santiago de Cuba*.—The United States consul, in his dispatch dated August 31, denies the recent newspaper reports that the steamer "City of Baltimore" lost her chief officer, George Carr, by yellow fever when 6 hours out of Santiago de Cuba bound for Philadelphia, and thereupon returned to Santiago de Cuba and reported the death as from apoplexy. He states that both the health-officer of the port and the sanitary inspector pronounced the cause of death to be apoplexy. "Outside the city limits, at the military hospital, there are about 20 cases and deaths from yellow fever. These cases are lately landed recruits, and, as they are completely isolated from the city, do not affect the health of Santiago de Cuba, nor of its port."

September 26: The consul telegraphed as follows: "Absolutely deny statements published Santiago, 'yellow fever reigns supreme.' Not one case in port and town. Usual number cases as all the year in military hospital, outside town limits."

*Port au Prince, Hayti*.—The United States consul, in his dispatch dated September 8, relative to fever at that place, stated that "of the cases of fever it is said that 3 or 4 were yellow fever imported here. They were isolated, but a form of intermittent fever has been contracted on a couple of vessels. On the American brig 'Water Witch' 2 cases, one of which is well and the other convalescent. There is no spread of the disease, and with these measures of precaution it is deemed that the city will continue in its normal state of healthfulness."

*Gonaïves, Hayti*.—One death occurred on the brig "Fairfield" at this place. The vessel sailed September 8 for New York. The health officer at New York has been notified.

## MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated popula- tion.	Total deaths from all causes.	Deaths from—								
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping- cough.
Paris .....	Sept. 8.....	2,260,945	872	.....	.....	2	.....	17	1	22	17	3
Glasgow .....	Sept. 8.....	545,678	187	.....	.....	.....	.....	2	.....	6	.....	.....
Warsaw .....	Sept. 1.....	444,814	241	.....	.....	6	.....	.....	8	4	.....	.....
Rome.....	Sept. 8.....	391,188	180	.....	.....	.....	.....	1	.....	3	.....	.....
Amsterdam .....	Aug. 18.....	389,916	130	.....	.....	.....	.....	2	.....	3	.....	.....
Munich.....	Aug. 25.....	275,000	186	.....	.....	.....	.....	.....	6	1	.....	.....
Edinburgh.....	Aug. 18.....	262,733	77	.....	.....	.....	1	.....	.....	1	.....	.....
Edinburgh.....	Aug. 25.....	262,733	73	.....	.....	.....	1	.....	1	1	.....	.....
Belfast.....	Sept. 8.....	227,022	72	.....	.....	.....	.....	2	.....	.....	.....	.....
Genoa.....	Sept. 8.....	179,772	80	.....	.....	.....	1	.....	.....	2	.....	.....
Trinidad.....	Aug. 25.....	178,270	37	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trinidad.....	Sept. 2.....	178,270	27	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trieste.....	Sept. 1.....	154,500	72	.....	.....	6	.....	.....	.....	2	.....	.....
Toronto.....	Sept. 15.....	130,000	25	.....	.....	.....	.....	2	.....	1	.....	.....
Stuttgart.....	Sept. 8.....	125,510	38	.....	.....	.....	.....	.....	.....	1	.....	.....
Bremen.....	Sept. 6.....	122,000	43	.....	.....	.....	.....	1	1	.....	.....	.....
Barmen.....	Sept. 8.....	109,000	43	.....	.....	.....	.....	.....	.....	.....	.....	.....
Leith.....	Aug. 18.....	74,320	20	.....	.....	.....	1	.....	.....	.....	.....	.....
Leith.....	Aug. 25.....	74,320	26	.....	.....	.....	.....	.....	1	.....	.....	.....
Mayence.....	Aug. 25.....	65,802	35	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mayence.....	Sept. 1.....	65,802	28	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cadiz.....	Sept. 8.....	65,028	41	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bermuda.....	Sept. 18.....	15,262	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cartagena, U. S. of Colo.....	Sept. 1.....	13,000	7	.....	.....	.....	.....	.....	.....	.....	.....	.....
Matamoras.....	Sept. 8.....	12,000	8	.....	.....	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

*Buffalo, N. Y.*—Passed Assistant Surgeon W. A. Wheeler, U. S. M.-H. S., has been authorized to vaccinate employes of the post office, to prevent the spread of small-pox, as requested by the postmaster.

*Presque Isle County, Michigan.*—Dr. Jas. B. Patterson, in a communication to Surgeon W. H. Long, at Detroit, dated September 15, states that "I have treated 231 cases of dysentery (epidemic), and there have been 10 fatalities. The only death that occurred when the patients were seen in the earlier stages died from pneumonia. \* \* \* All the deaths but 1 occurred in children—none over four years. It certainly was very contagious, running through whole families, and jumping miles of territory to where some member would go; so that in every instance it was traceable. \* \* \* The treatment most successful: Pepsin, sub-nitrate of bismuth, Dover's powder, sterilized milk diet. Afterward, tr. ferri chlor., tr. opii, and dry heat to abdomen."

*Cape Charles Quarantine Station.*—September 25: Passed Assistant Surgeon L. L. Williams reports, with reference to the crew of the British steamer "Buda Pesth:" "Have examined crew; found 9 men sick with malarial fever. The cases are not suspicious."



*Burgaw, N. C.*—Passed Assistant Surgeon Brooks, M.-H. S., in his report dated September 20, relative to the newspaper statement of the existence of a case of yellow fever at Burgaw, states that "the inspector sent by the State board of health has declared the case to be without doubt hæmorrhagic malarial fever."

*San Rafael, Ariz.*—Collector Magoffin, at El Paso, Tex., in reply to an inquiry for further information as to the small-pox at San Rafael, states that "quarantine established by county officers. No action necessary."

*Tampa, Fla.*—Dr. J. P. Wall, in his report dated September 16, 1888, states that "the situation here has, from the two first weeks after the appearance of yellow fever on the 7th and 8th of August, gradually improved, the cases becoming milder and less frequent, until it has about ceased entirely. During the past week I have seen nothing in the way of fever that I would positively declare to be yellow fever, nor have any cases been reported by other physicians. \* \* \* No sickness at Plant City."

September 21: "I am informed that 1 case of well-developed yellow fever and 5 cases of milder fever have occurred at Mango, a railroad station with few residents, 9 miles east of Tampa, and the Southern Florida Railroad. No deaths. People of adjacent country warned to keep away."

*Gainesville, Fla.*—Yellow fever was introduced into Gainesville by a militia company returning from duty at Fernandina.

September 16: Three cases of yellow fever officially announced.

September 18: The secretary of the board of health telegraphed: "Have isolated all cases, and am fumigating and disinfecting all premises within 100 yards of all cases. T. A. Evans, of the fever cases, died yesterday evening. No news to-day."

September 19: "No new cases. Weather clear, prospect bright."

September 23: "No new cases. All the sick doing well. Weather clear."

September 27: "One death last night; no new cases. All sick convalescent and being sent out of city to Camp Perry, with all nurses and kindred.

"Not one case to-day; no deaths. Major Gruelle is the new case, and is supposed to have contracted fever by reason of being the officer who acted as fumigating officer and was in the house of the sick."

*Decatur, Ala.*—Mr. A. D. Spencer, the first case of yellow fever at Decatur, was taken sick September 4 and died September 11.

In reply to an inquiry, Dr. Jerome Cochran, State health officer, telegraphed September 23: "Need no aid at present. Very few left in city except negroes. The problem will be to feed them."

September 28: "I want to say, and assure you in the most positive way, that the appeals made to you by the two mayors of the two Decatur are not sanctioned by the relief committee, composed of the best people here, and will not be sanctioned by the governor of the State."

*Fernandina, Fla.*—September 24 Acting Assistant Surgeon Starbuck, Marine-Hospital Service, telegraphed: "An autopsy to-day demonstrates that yellow fever exists here. Several other cases with clinical symptoms of yellow fever."

September 24: "Twelve new cases reported."

September 25: "The president of the board of health reports two deaths from yellow fever to-day."

*Jackson, Miss.*—In reply to an inquiry, Dr. Wirt Johnson, secretary board of health, telegraphed September 22: "Thanks. We do not need assistance. There have been 10 cases of yellow fever here and 2 deaths to date."

September 25: "Total number of cases to date, 14; deaths, 4. No new cases reported for the 24 hours ending 6 p. m. yesterday. Have the city surrounded by a cordon, and are doing all we can to prevent the spread of the disease. Tents have arrived to-day, and a refugee camp will be established as soon as possible."

September 26: "No new cases or deaths for 12 hours ending this 6 p. m. Will have a camp of refugees established to-morrow."

September 27: "One suspicious case reported and 1 death for 24 hours ending 6 p. m. Total cases to date, 14; deaths, 5."

September 28: "No new cases or deaths for 24 hours ending 6 p. m."

*Atlanta, Ga.*—The following resolution of the Atlanta Board of Health has been received from Dr. James B. Baird, secretary, September 19: "*Resolved*, That no excursion train bearing refugees from any place infected by yellow fever shall come into the city of Atlanta."

*Wilmington, N. C.*—Dr. Thomas F. Wood, secretary North Carolina Board of Health, states that the board of health have given their opinion to Governor Scales that no more refugees from yellow-fever districts will be received into the State of North Carolina unless they are placed in sanitary camps under competent guard.

*Jacksonville, Fla.*—September 24 Dr. J. Y. Porter telegraphed: "Took charge of yellow-fever hospital yesterday; 113 cases and 5 deaths here to-day."

September 28: "Total number of cases to date, 2,453; total number of deaths to date, 242."

*La Villa Junction, Fla.*—September 25 Dr. Julius Wise telegraphed: "Fumigating-station established at La Villa Junction; will be working to-day."

*Camp Perry, Fla.*—September 27: "Morning report: Present—officers, 6; guards, 11; employés, including carpenters, 55. Refugees arrived, 5; discharged 9; remaining, 171; fever camp, 4."

September 27: "Dr. Posey fully recovered; wishes to go to Fernandina for duty."

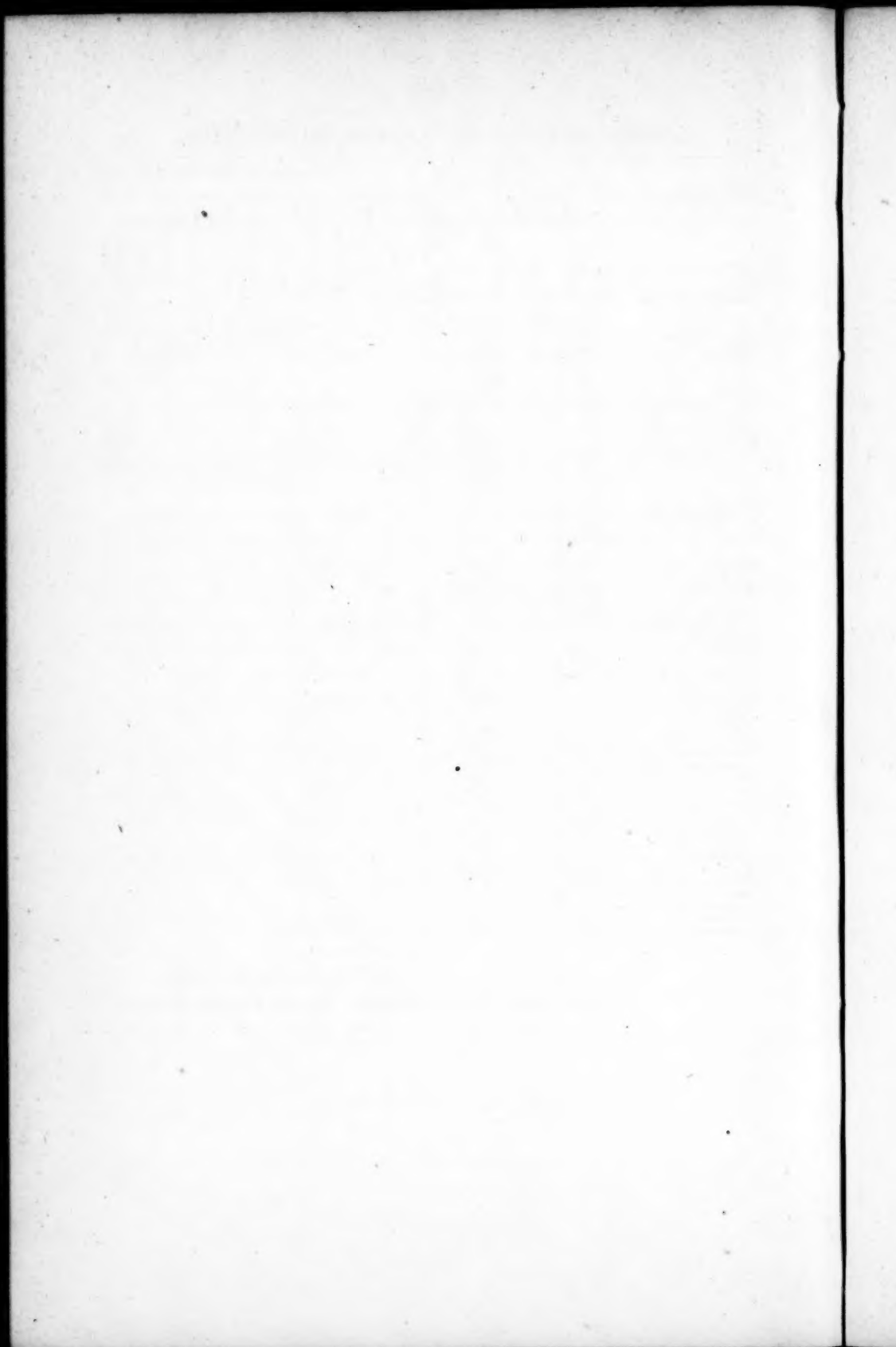
September 28: "Morning report: Present—officers, 6; guards, 11; employés, including carpenters, 56. Refugees arrived, 16; discharged, 26; remaining, 161. Several good people reported discharged, but cannot leave for want of means."

*Medical officers of the Navy.*—All the acclimated medical officers of the Marine-Hospital Service being otherwise engaged, the Surgeon-General of the Navy was asked for medical officers who had had yellow fever. Surgeon J. W. Ross and Assistant Surgeon William Martin volunteered their services, and have been assigned to duty at Fernandina, Fla., and New Orleans, La., respectively. The former to have charge of the Government relief measures at Fernandina, and the latter to await orders at New Orleans for the present.

## MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—										
				Cholera.	Yellow fever.	Small-pox.	Variceloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
Philadelphia, Pa.....	Sept. 15....	1,016,758	320			1				29	3	5	1	
Philadelphia, Pa.....	Sept. 22....	1,016,758	329							23	1	5		6
Chicago, Ill.....	Sept. 22....	800,000	273							8	4	14	2	2
Brooklyn, N. Y.....	Sept. 22....	793,960	376							7	4	12	1	10
Baltimore, Md.....	Sept. 22....	431,879	147							4		2		2
Boston, Mass.....	Sept. 22....	390,597	205						1					
San Francisco, Cal.....	Sept. 14....	330,000	117							8		7		
Cincinnati, Ohio.....	Sept. 22....	253,139	106							3		2	1	
New Orleans, La.....	Sept. 18....	248,000	120							3		13		3
Cleveland, Ohio.....	Sept. 1....	227,861	107							2		3		
Cleveland, Ohio.....	Sept. 8....	227,861	101							3		3		1
Washington, D. C.....	Sept. 22....	225,000	103							4		2		6
Louisville, Ky.....	Sept. 22....	200,000	61		1					10		2		1
Milwaukee, Wis.....	Sept. 22....	195,000	78											
Kansas City, Mo.....	Sept. 22....	180,000	35								1			1
Minneapolis, Minn.....	Sept. 22....	180,000	73											
St. Paul, Minn.....	Sept. 15....	175,000	51							5		4		
Detroit, Mich.....	Sept. 22....	116,340	73							6		1		
Richmond, Va.....	Sept. 24....	100,000	39							4		7		2
Denver, Colo.....	Sept. 21....	96,000	39							1		1		
Columbus, Ohio.....	Sept. 22....	93,000	30							3				1
New Haven, Conn.....	Sept. 22....	82,000	26							1				
Toledo, Ohio.....	Sept. 22....	80,000	21							1	1			
Nashville, Tenn.....	Sept. 22....	65,153	19							1	1			
Fall River, Mass.....	Sept. 22....	65,000	30							1		1		
Charleston, S. C.....	Sept. 22....	60,145	41									1		
Reading, Pa.....	Sept. 25....	60,000	19											
Evansville, Ind.....	Sept. 22....	53,000	19								1			
Savannah, Ga.....	Sept. 21....	52,827	11											
Lynn, Mass.....	Sept. 24....	50,000	13									1		
Manchester, N. H.....	Sept. 15....	41,000	12											
Mobile, Ala.....	Sept. 22....	40,000	13											
Portland, Me.....	Sept. 15....	40,000	17											
Portland, Me.....	Sept. 22....	40,000	20									3		
East Saginaw, Mich.....	Sept. 22....	33,000	7											
Burlington, Iowa.....	Sept. 19....	30,166	6									2		1
Davenport, Iowa.....	Sept. 15....	30,084	7							1				
Davenport, Iowa.....	Sept. 22....	30,084	4									2		
New Albany, Ind.....	Sept. 22....	30,000	6									2		
Altoona, Pa.....	Sept. 15....	29,546	3											
Yonkers, N. Y.....	Sept. 14....	28,000	10											
Yonkers, N. Y.....	Sept. 21....	28,000	13									1		
Auburn, N. Y.....	Sept. 22....	26,000	9											
Haverhill, Mass.....	Sept. 22....	25,000	17								1			
Jackson, Mich.....	Sept. 23....	22,500	8										2	
Poughkeepsie, N. Y.....	Sept. 21....	22,000	8											
Newton, Mass.....	Sept. 22....	21,105	7							1				
Newport, R. I.....	Sept. 13....	20,466	7								1			
Newport, R. I.....	Sept. 20....	20,466	9								1	1		

JOHN B. HAMILTON,  
Supervising Surgeon-General, Marine-Hospital Service.





## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 40. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., October 5, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended October 5, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended September 15 corresponded to an annual rate of 17.7 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Wolverhampton, viz., 13.4, and the highest in Norwich, viz., 26.2 a thousand. Small-pox caused 1 death in Preston. Diphtheria caused 3 deaths in Manchester, 2 in Brighton, 2 in Portsmouth, 2 in Salford, and 2 in Sheffield.

*London.*—One thousand three hundred and thirty-one deaths were registered during the week, including measles, 27; scarlet fever, 24; diphtheria, 18; whooping-cough, 31; enteric fever, 12; diarrhœa and dysentery, 122; choleraic diarrhœa, 1. Diseases of the respiratory organs caused 184 deaths; different forms of violence, 61; and 15 suicides were registered. The deaths from all causes corresponded to an annual rate of 16.2 a thousand. In greater London 1,671 deaths were registered, corresponding to an annual rate of 15.8 a thousand of the population. In the "outer ring" the deaths included diarrhœa, 34; diphtheria, 7; fever, 5.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended September 15 in the 16 principal town districts of Ireland was 18.0 a thousand of the population. The lowest rate was recorded in Armagh, viz., 5.2, and the highest in Waterford, viz., 25.5 a thousand. In Dublin 131 deaths were registered, including measles, 1; enteric fever, 1; scarlet fever, 3; diarrhœa, 8; whooping-cough, 3; dysentery, 2; varicella, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week ended September 15 corresponded to an annual rate of 16.0 a thousand of

the population, which is estimated at 1,314,274. The lowest mortality was recorded in Greenock, viz., 10.1, and the highest in Paisley, viz., 26.1 a thousand. The aggregate number of deaths registered from all causes was 405, including measles, 4; scarlet fever, 4; diphtheria, 3; whooping-cough, 7; fever, 8; and diarrhœa, 29.

*Buenos Ayres.*—One thousand one hundred and eighty-eight deaths were registered during the month of June, including confluent small-pox, 70; diphtheria, 108; and enteric fever, 22.

*Santander, Spain.*—Seventy-three deaths were registered during the ten days ending September 30, 1888, including "typhoid diseases," 3; quinsy and diphtheric diseases, 3; and dysentery, 1.

*Trapani, Italy.*—One hundred and twenty-four deaths from small-pox (all children) are reported for the month of August, 1888.

*Palermo, Italy.*—The United States consul, in transmitting abstract of bills of health for the month of August, 1888, states that "deaths from small-pox have not been reported, but nevertheless deaths have occurred therefrom in Palermo during the month."

*Batavia, Java* (August 11).—The United States consul writes as follows: "I have the honor to inform you of the presence of cholera and small-pox in this city and the port of Soerabaya, and in the interior. Sporadic cases, such as those under consideration are of yearly occurrence, and therefore little fear is entertained by the medical authorities that the disease will become epidemic, though great stress is now laid by them upon the importance of vaccination and upon the use of water from the artesian wells of the city water-works in preference to that from any other source. It is impossible to state the number of cases, as there are no boards of health, and the information obtained from the city physicians and overseers of the quarters for Asiatics and natives is unreliable. It may be mentioned in this connection, however, that about a dozen patients have of late received treatment at the hospital here, some of the cases resulting fatally, while nearly two dozen huts among the native dwellings in the European quarter, to which the diseases are at present confined, have been marked with the red flag. Such precautions as the means at their command, and the indifference, carelessness, and fatalism of the natives permit, are being taken by the authorities to prevent the spread of the diseases; and no cases have as yet been reported among the densely-crowded populations about the port. Advices from other ports are still more uncertain, and consequently little attention is paid to the matter on the part of the community."

*Martinique.*—The United States consul, in his dispatch dated Sep-

tember 10, states that "in the two weeks preceding the 4th of September there were in the island only 47 cases of small-pox and 7 deaths therefrom. Four sporadic cases of yellow fever have made their appearance here during the past two weeks, 3 from imprudent exposure to sun on the part of Dutch sailors, and 1 by contact with said sailors in the hospital here, the latter being an English sailor suffering from another malady. One of the Dutch sailors has since died, the others being now pronounced out of danger."

*Port au Prince, Hayti.*—The United States consul, in his letter dated September 17, states that "four men on the French sailing-vessel 'Providencia,' that is said to have brought yellow fever here, died. Three men died belonging to a German vessel. The British brig 'Evvirria' left here for Gonaïves, and two of her crew died there. These cases are said to have been yellow fever. I received a note the 14th instant from an officer of the United States steamer 'Galena,' dated Kingston, Jamaica, the 7th instant, stating that Her Majesty's steamer 'Ready' had arrived at Kingston that morning with 2 cases of fever on board (I presume it meant yellow fever), and that the Atlas steamer 'Alvena,' from the coast of Hayti and direct from this city, where she remained a few hours only, had been quarantined there. I have delivered a clean bill of health to-day to the Dutch steamship 'Prins Orange, Nassau,' from Amsterdam via Curaçoa and other ports, arrived here yesterday and bound directly to New York City, because if there be any cases of yellow fever here they are two or three isolated ones only, and at the French hospital. Otherwise the city and surroundings are healthy at present, and there appears no suspicion of contagious diseases whatever."

*Havana, Cuba.*—Twelve deaths from yellow fever are reported for the week ended September 14.

*Cardenas, Cuba* (September 21).—Good health prevails in town and harbor.

*Santiago de Cuba.*—The United States consul, in his dispatch dated September 22, 1888, states that "the health of the town is good, and there is not one single case of yellow fever within its limits. The port, notwithstanding a number of Spanish gunboats remaining here at anchor for indefinite periods, has not recorded one single case of contagious disease this whole summer. The military hospital, outside of city limits, contains a number of cases of yellow fever. Mere boys are brought here from Spain as recruits. Very often they are hired out to do hard work in sun and rain, and when they get intermittent fever are put in yellow-fever wards in the military hospital, and necessarily succumb to the disease. Seventeen cases are recorded there this week—

one case an American, who has died at Juragua Mines, 22 kilometers from this city. These mines export ore to the States—Philadelphia and Baltimore.

*Colon.*—The United States consul, under date of August 31, states that "it is almost impossible to obtain particular data. The official report of burials during the month is 60. In July it was 59. This is maximum this year, and indicates a mortality of about 3.5 per cent. during the year. The sanitary condition of Colon improves yearly and very much. The prevailing diseases are pernicious or malignant, remittent, and intermittent fevers. Two cases of yellow fever, not original in this consular district, but brought here from the line of the canal. One case fatal, the other not."

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
Paris .....	Sept. 15....	2,260,945	855	.....	.....	1	.....	16	1	18	13
Glasgow .....	Sept. 15....	545,678	169	.....	.....	.....	.....	.....	3	2	.....
Warsaw .....	Sept. 8....	444,814	310	.....	.....	4	.....	.....	14	10	.....
Calcutta .....	Aug. 11....	433,219	163	7	.....	1	.....	.....	.....	.....	.....
Calcutta .....	Aug. 18....	433,219	183	5	.....	1	.....	.....	.....	.....	.....
Rome .....	Aug. 4....	391,188	203	.....	.....	.....	.....	1	.....	1	.....
Amsterdam .....	Sept. 15....	380,916	147	.....	.....	.....	.....	1	.....	.....	.....
Munich .....	Sept. 1....	278,000	173	.....	.....	.....	.....	.....	1	5	.....
Munich .....	Sept. 8....	278,000	162	.....	.....	.....	.....	.....	4	5	.....
Palermo .....	Sept. 8....	250,000	69	.....	.....	.....	.....	.....	2	1	.....
Belfast .....	Sept. 15....	227,022	77	.....	.....	.....	.....	.....	2	2	.....
Bristol .....	Sept. 1....	226,510	50	.....	.....	.....	.....	.....	2	.....	.....
Genoa .....	Sept. 15....	179,787	87	.....	.....	3	2	.....	.....	1	.....
Trieste .....	Sept. 8....	154,500	77	.....	.....	4	.....	.....	.....	1	.....
Toronto .....	Sept. 22....	130,000	18	.....	.....	.....	.....	.....	.....	.....	.....
Stuttgart .....	Sept. 15....	125,510	32	.....	.....	.....	.....	.....	1	.....	.....
Bremen .....	Sept. 8....	122,000	40	.....	.....	.....	.....	.....	1	.....	.....
Havre .....	Sept. 8....	112,074	76	.....	.....	.....	.....	8	.....	.....	.....
Pernambuco .....	Aug. 28....	110,000	61	.....	.....	.....	.....	1	1	.....	.....
Leghorn .....	Sept. 16....	101,854	26	.....	.....	.....	.....	.....	.....	.....	.....
Mayence .....	Sept. 8....	65,802	34	.....	.....	.....	.....	.....	1	.....	.....
Maracaibo .....	Aug. 18....	40,000	16	.....	1	.....	.....	1	.....	.....	.....
Maracaibo .....	Aug. 25....	40,000	15	.....	.....	.....	.....	.....	.....	.....	.....
Maracaibo .....	Sept. 1....	40,000	13	.....	1	.....	.....	1	.....	.....	.....
Callao .....	Aug. 25....	34,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Curacao .....	Sept. 15....	25,000	5	.....	.....	.....	.....	.....	.....	.....	.....
Vera Cruz .....	Sept. 13....	23,800	14	.....	.....	1	.....	.....	.....	.....	.....
Vera Cruz .....	Sept. 20....	23,800	26	.....	1	.....	.....	.....	.....	1	.....
Gibraltar .....	Sept. 9....	23,631	5	.....	.....	.....	.....	.....	.....	1	.....
Kingston, Canada .....	Sept. 21....	16,216	3	.....	.....	.....	.....	.....	.....	.....	.....
Cape Haytien .....	Sept. 15....	15,000	9	.....	.....	.....	.....	.....	.....	.....	.....
Turk's Islands .....	Sept. 19....	5,000	5	.....	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

*Buffalo, N. Y.*—Passed Assistant Surgeon Wheeler reported, under date of October 3, as follows:

At the present time there are 22 cases of small-pox in the city pest-house under treatment. Total number of cases to date is 69, and the

number of deaths 17. The city authorities are making a house-to-house inspection in the infected district, and the people are being generally vaccinated.

*Ship Island Quarantine Station.*—The following report has been received from Passed Assistant Surgeon H. R. Carter (September 30, 1888):

I have the honor to report the arrival last evening of the Spanish bark 'Maria,' of Bilbao, at this station with 3 cases of yellow fever aboard. Said vessel left Havana on the 17th instant for Mobile, Ala., and was not allowed to enter that port, as she had sickness aboard.

The men were taken to hospital this morning, it being inadvisable to move them during the storm of last night. One of the cases is convalescent, and was doubtless mild. It is but fair to state that Acting Assistant Surgeon Lehman does not coincide with me in the above diagnosis, holding them "suspicious cases."

*Jackson, Miss.*—Dr. Wirt Johnson, secretary State board of health, telegraphed—

September 29: "No new cases for six days; no deaths for 58 hours ending this 6 p. m. Total cases to date, 14; deaths, 5."

September 30: "No new cases for seven days; no deaths for three days."

October 3: "Situation unchanged. Total cases to date, 14; deaths, 5. Light frosts are reported by several parties this a. m."

*Tampa, Fla.*—Dr. J. P. Wall, president of the board of health, in his report dated September 26, states that "for the week ending to-day I have seen 7 cases of yellow fever. One death in Tampa on the 24th instant, making 4 deaths in all since the first indigenous case appeared, on the 7th of August."

*Palmetto, Fla.*—Doctor Wells reported 20 cases at Palmetto, and 3 deaths during Friday and Saturday. The remaining sick doing well.

*Gainesville, Fla.*—Dr. J. A. Carlisle, secretary board of health, telegraphed—

September 29: "Major Gruelle died to-day. One new case, a niece of Major Gruelle, to-day. We shall need aid in a few days. We want nurses now, but cannot get them."

September 30: "One other new case yesterday; no deaths. Fever is not yet epidemic, although 3 cases have occurred other than members of the Gainesville guards. They are traceable to direct infection. Our expenses for guards in isolating cases is large, and we shall require some aid to pay the same. Instruct how to obtain the money."

*Way Cross, Ga.*—Assistant Surgeon Magruder telegraphed September 30: "Reliable report of one case yellow fever at Callahan. Will stop all baggage unless otherwise ordered."

Dr. Posey has been ordered to proceed to Callahan.



*Camp Perry, Fla.*—Surgeon W. H. H. Hutton reported as follows:

September 29: "Morning report: Present—officers, 6; guards, 11; employés, including carpenters, 56. Refugees arrived, 11; discharged, 26; remaining, 146. Fever camp, 6. Can accommodate 250 extra now."

September 30: "Present—officers, 6; guards, 11; employés, 56. Refugees arrived, 8; discharged, 19; remaining, 135. Fever camp, 7—4 sick, 3 convalescent. The weather in the past 24 hours has been too cold for comfort. The arrivals during the past week have been fewer than the discharges. The capacity of the camp has been nearly doubled in every way, in anticipation of refugees from Gainesville and Fernandina. None have come, owing, we understand, to refusal of Callahan to allow them to pass that point. In spite of her shotgun quarantine, Callahan now has the fever, and asked last night if we could take 15 refugees to-day. Wired them we could, *if they would allow our train to stop for them to-day*. Have completed a depot 25 by 30 at switch, for storage of baggage—fumigated by Dr. Wise. Of the 550 people arrived so far, we have had 13 cases of fever only, and 1 death—a remarkable result, highly creditable to the officers in charge of the fever hospital."

October 3: "Present—officers, 6; guards, 11; employés, 43. Refugees arrived, 20; discharged, 18; remaining, 138. Unable to leave, but discharged, 65. Fever camp, 5, all convalescent."

October 4: "Present—officers, 6; guards, 11; employés, 43. Refugees arrived, 32; discharged, 2; remaining, 168. Remaining unable to leave, 65. Total, 293. Fever camp, 5, all convalescent."

*Jacksonville, Fla.*—Dr. J. Y. Porter, in charge of Government relief measures, telegraphed October 3: "New cases to-day, 72; deaths, 6—total cases reported, 2,895; deaths, 270. Patients: St. Luke's Hospital, 22; Sand Hills Hospital, 25. Took charge of fumigating of houses, date from 1st."

*Fernandina, Fla.*—Surgeon J. W. Ross, United States Navy, telegraphed October 3: "For 24 hours ending 6 p. m., 1 death; no new cases. One new case at Callahan."

The wires being down, no telegrams were received from Fernandina during the week preceding October 3.

October 5: "Much more sickness here, principally among negroes, than is thought or reported. Howard Association has no more means than necessary for care of sick and needy; number of latter large and increasing."

The following circular has been issued concerning certain articles of freight not requiring fumigation :

TREASURY DEPARTMENT,  
*Office Supervising Surgeon-General, M.-H. S.,*  
Washington, D. C., October 1, 1888.

*To medical officers and sanitary inspectors,*  
*United States Marine-Hospital Service:*

Oranges, lemons, and limes, unless packed in towns known to be infected by yellow fever, will be passed without fumigation.

Cigars and leaf-tobacco will also be passed without fumigation.

JOHN B. HAMILTON,

Approved: *Supervising Surgeon-General, M.-H. S.*

HUGH S. THOMPSON,  
*Acting Secretary of the Treasury.*

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Variceloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles, Whooping-cough.
New York, N. Y.	Sept. 29.	1,537,292	329						23	10	16	7	21
Philadelphia, Pa.	Sept. 29.	1,016,758	187						21	1	5		5
Boston, Mass.	Sept. 29.	415,000	97						6		11		
San Francisco, Cal.	Sept. 21.	330,000	113						3	1	1		
Cincinnati, Ohio.	Sept. 29.	255,139	108						5		2		
New Orleans, La.	Sept. 27.	248,000	77								18		
Pittsburgh, Pa.	Sept. 22.	230,000	76						8	3	6		1
Pittsburgh, Pa.	Sept. 29.	230,000	45						8	3	2		1
Louisville, Ky.	Sept. 29.	200,000	51						1				
Milwaukee, Wis.	Sept. 29.	195,000	44										
Minneapolis, Minn.	Sept. 22.	180,000	56						5	1	4		
St. Paul, Minn.	Sept. 22.	175,000	42						3		1		
St. Paul, Minn.	Sept. 28.	175,000	33						3		3		
Rochester, N. Y.	Sept. 29.	120,000	56						3				
Detroit, Mich.	Sept. 29.	116,340	23						1		1		1
Richmond, Va.	Sept. 29.	100,000	36						1		2		
Denver, Colo.	Sept. 28.	96,000	14						4			1	
Columbus, Ohio.	Sept. 29.	93,000	19						5				1
New Haven, Conn.	Sept. 29.	82,000	29										
Toledo, Ohio.	Sept. 28.	80,000	37										
Nashville, Tenn.	Sept. 29.	65,153	13						3				1
Fall River, Mass.	Sept. 29.	65,000	17						3	3			
Charleston, S. C.	Sept. 29.	60,145	17						1		1		
Evansville, Ind.	Sept. 29.	53,000	7										
Savannah, Ga.	Sept. 28.	52,827	9										
Lynn, Mass.	Sept. 29.	50,000	15										
Council Bluffs, Iowa.	Sept. 22.	45,000	9						2				
Portland, Me.	Sept. 29.	40,000	13										
Galveston, Tex.	Sept. 14.	40,000	15						1				
Galveston, Tex.	Sept. 21.	40,000	3										
Wheeling, W. Va.	Sept. 29.	35,000	15										
East Saginaw, Mich.	Sept. 29.	33,000	9									4	
Davenport, Iowa.	Sept. 29.	30,084	5										
New Albany, Ind.	Sept. 29.	30,000	12										
Binghamton, N. Y.	Sept. 30.	30,000	3						2				
Altoona, Pa.	Sept. 22.	29,546	23										
New Bedford, Mass.	Sept. 22.	26,845	15										
New Bedford, Mass.	Sept. 29.	26,845	10										
Auburn, N. Y.	Sept. 27.	26,000	9						1	1			
Haverhill, Mass.	Sept. 29.	25,009	31						1				
Petersburg, Va.	Sept. 26.	25,000	8									2	
Jackson, Mich.	Sept. 29.	22,500	8										
Poughkeepsie, N. Y.	Sept. 28.	22,000	5										
Newtown, Mass.	Sept. 29.	21,105	7										
Newport, R. I.	Sept. 27.	20,466	8										
Pensacola, Fla.	Sept. 22.	15,000	3										
Pensacola, Fla.	Sept. 29.	15,000											

JOHN B. HAMILTON,  
*Supervising Surgeon-General, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract  
          { No. 41. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., October 12, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended October 12, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended September 22 corresponded to an annual rate of 18.0 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bristol, viz., 11.1, and the highest in Preston, viz., 27.8 a thousand. Small-pox caused 1 death in Hull. Diphtheria caused 2 deaths in Manchester.

*London.*—One thousand two hundred and ninety-eight deaths were registered during the week, including measles, 32; scarlet fever, 20; diphtheria, 24; whooping-cough, 22; enteric fever, 11; diarrhœa and dysentery, 78; simple cholera and choleraic diarrhœa, 4. Diseases of the respiratory organs caused 179 deaths; different forms of violence, 69; and 9 suicides were registered. The deaths from all causes corresponded to an annual rate of 15.8 a thousand. In greater London 1,629 deaths were registered, corresponding to an annual rate of 15.4 a thousand of the population. In the "outer ring" the deaths included diarrhœa, 30; diphtheria, 8; whooping-cough, 7.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended September 22 in the 16 principal town districts of Ireland was 19.2 a thousand of the population. The lowest rate was recorded in Sligo, viz., 4.8, and the highest in Armagh, viz., 46.5 a thousand. In Dublin 125 deaths were registered, including enteric fever, 3; scarlet fever, 1; diarrhœa, 17; whooping-cough, 1; dysentery, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week

ended September 22 corresponded to an annual rate of 17.3 a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Leith, viz., 9.8, and the highest in Paisley, viz., 27.0 a thousand. The aggregate number of deaths registered from all causes was 436, including measles, 10; scarlet fever, 6; diphtheria, 6; whooping-cough, 2; fever, 4; and diarrhœa, 29.

*Netherlands.*—The deaths registered in the principal cities of the Netherlands, having a population of 1,149,778 during the month of July, 1888, corresponded to an annual rate of 19.7 a thousand of the population. The lowest rates was recorded in Leeuwarden, viz., 14.5, and the highest in Hertogenbosch, viz., 25.2. The total number of deaths from all causes was 1,924, including typhus and enteric fever, 12; scarlet fever, 1; measles, 14; whooping-cough, 18; diarrhœa and dysentery, 50.

*Calcutta.*—Seven hundred and twenty deaths were registered during the month of July, 1888, including cholera, 54; small-pox, 2; fevers, 181; bowel complaints, 54.

*Catania, Italy.*—Four hundred and thirty-five deaths were registered during the month of July, 1888, including small-pox, 87; typhoid fever, 13; typhus fever, 1; other contagious diseases, 43. The sanitary condition of the city (excepting a few cases of small-pox), was good.

*Hobart, Tasmania.*—Sixty-one deaths were registered during the month of July, 1888, including 1 from typhoid fever,

*Malta and Gozo.*—Two hundred and five deaths were registered during the period from the 16th to the 31st August, 1888, including measles, 7; diphtheria, 1; continued fever, 2; and dysentery, 3.

*Cardenas, Cuba.*—October 5. Good health is reported in town and harbor. Low barometer and rainy weather.

*Barbadoes, W. I.*—September 22. There is no system of registration. Health of Island good.

*Vera Cruz.*—The United States consul states, under date of September 27, that "the general health of the place is good. There are no cases of yellow fever here this week. One death from small-pox on the 27th, and no other cases reported.

*Bordeaux, France.*—Four hundred and fifty-one deaths were registered during the month of August, 1888, including enteric fever 8; and diphtheria and croup 8.



## MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
Paris .....	Sept. 22.....	2,260,945	838			4		13	1	12	7
Glasgow .....	Sept. 22.....	545,678	194					1	4		
Warsaw .....	Sept. 15.....	444,814	248			7			13	7	
Calcutta .....	Aug. 25.....	433,219	165	12		1					
Rome .....	Aug. 11.....	300,467	190					4		3	
Edinburgh .....	Sept. 15.....	262,733	70					2			
Palermo .....	Sept. 15.....	250,000	78						5	1	
Palermo .....	Sept. 22.....	250,000	83						1	4	
Belfast .....	Sept. 22.....	227,022	87					1			
Genoa .....	Sept. 22.....	179,780	68		3	1				1	
Toronto .....	Sept. 29.....	130,000	36					1		2	
Stuttgart .....	Sept. 22.....	125,510	41							3	
Bremen .....	Sept. 20.....	122,000	42								
Havre .....	Sept. 15.....	112,074	79		1			1		1	
Pernambuco .....	Sept. 4.....	110,000	87			2	1	3			
Pernambuco .....	Sept. 11.....	110,000	83					1	2		
Barmen .....	Sept. 15.....	109,000	36			2				1	
Barmen .....	Sept. 22.....	109,000	29							1	
Leith .....	Sept. 15.....	74,320	22					1			
Cádiz .....	Sept. 15.....	65,028	42								
Guayaquil .....	Sept. 1.....	35,000	63		1			23			
Guayaquil .....	Sept. 8.....	35,000	65		2	9		12			
Vera Cruz .....	Sept. 27.....	23,800	19			1					
Gibraltar .....	Sept. 16.....	23,631	10							1	
Kingston, Canada .....	Sept. 28.....	15,827									
St. Thomas .....	Oct. 5.....	15,827	15								
Cartagena, Colombia .....	Sept. 21.....	15,000	40								
Cartagena, Colombia .....	Sept. 8.....	13,000	8		1						
Cartagena, Colombia .....	Sept. 15.....	13,000	14								
Laguayra .....	Sept. 8.....	7,428	4								
Laguayra .....	Sept. 15.....	7,428	12								
San Juan del Norte .....	Sept. 10.....	300									

## UNITED STATES.

The following circular, relative to the treatment of foul ships, has been issued :

## TREASURY DEPARTMENT,

## U. S. MARINE-HOSPITAL SERVICE,

Washington, D. C., October 5, 1888.

*To Medical Officers of the Marine-Hospital Service,  
and others whom it may concern :*

In order to stimulate ship-masters to aid in securing a clean ocean-going fleet, the following regulation concerning the treatment of foul ships is hereby adopted, and will be observed at all national quarantine stations :

1. When a vessel arrives at any national quarantine station from an infected port, and requires disinfection, she will be subjected to *ordinary disinfection*, as provided in former regulations.

2. When any vessel shall arrive at a national quarantine station in such foul condition as to render her dangerous from a sanitary point of view, and is found to require cleansing and disinfection, having at any

former time within one year been subjected to ordinary disinfection, such vessel will be required to undergo *extraordinary disinfection*, which, in addition to the ordinary measures, will include holy-stoning, scraping, the taking out of rotten wood, a second disinfection, and interior repainting, all of which will be required before granting a certificate of free pratique.

JOHN B. HAMILTON,  
*Supervising Surgeon-General, M.-H. S.*

Approved:  
HUGH S. THOMPSON,  
*Acting Secretary.*

GROVER CLEVELAND.

*Jacksonville, Fla.*—Dr. J. Y. Porter, in charge of Government relief measures, telegraphs as follows:

October 4: "New cases to-day, 75; deaths, 1. Total cases reported, 2,970; deaths, 271. Patients, St. Luke's, 19; patients, Sand Hills, 26."

October 5: "Request approval of the following: To suspend any general disinfection until epidemic ceases; have each house where cases have occurred visited as soon as possible, and mattresses, blankets, and woolen material that can in any way serve as fomites stamped with some device to distinguish them, and at close of epidemic destroyed. Parties not able to bear the expense to be reimbursed for the same on fair valuation made by board of appraisers from Citizen's Auxiliary Association. Parties financially able to bear loss to have no reimbursement. Establish a free boiling establishment for linen and cotton goods. The city and board of health will guarantee full authority by ordinance to enter and disinfect houses and premises."

October 5: "New cases to-day, 52; deaths, 6. Total cases reported, 3,022; deaths, 277. Patients, St. Luke's, 26; patients, Sand Hills, 23."

October 6: "New cases to-day, 81; deaths, 5. Total cases reported, 3,103; deaths, 282. Patients, St. Luke's, 23; patients, Sand Hills, 25. Desire to formulate rules for the disinfection of homes and destruction of property. Cannot do so until I get fuller instructions. Will establishment for boiling infected material be authorized?"

October 7: "New cases to-day, 48; deaths, 9. Total cases reported, 3,151; deaths, 291. Patients, St. Luke's, 22; patients, Sand Hills, 25."

October 8: "New cases to-day, 50; deaths, 4. Total cases reported (corrected), 3,208; deaths, 295. Patients, St. Luke's, 21; patients, Sand Hills, 25."

October 9: "New cases to-day, 93; deaths, 4. Total cases reported (corrected), 3,319; deaths, 299. Patients, St. Luke's, 18; patients, Sand Hills, 26."

October 10: "New cases to-day, 63; deaths, 3. Total cases reported, 3,382; deaths, 302. Patients, St. Luke's, 18; patients, Sand Hills, 29."

October 12: "New cases to-day, 66; deaths, 4. Total cases reported, 3,495; deaths, 308. Patients, St. Luke's, 18; patients, Sand Hills, 33."

*Camp Perry, Fla.*—Surgeon W. H. H. Hutton reported as follows:

October 4: "Morning report. Present—officers, 6; guards, 11; employés, 43. Refugees arrived, 32; discharged, 2; remaining, 168; remaining, unable to leave, 65; total, 293. Fever camp, 5, all convalescent."

October 5: "Morning report. Present—officers, 6; guards, 11; employés, 43. Refugees arrived, 16; discharged, 11; remaining, 173. Destitute furnished transportation, 21 adults and 5 children."

October 6: "Morning report. Present, officers, 6; guards, 11; employés, 43. Refugees arrived, 8; departed, 28; remaining, 156. Fever camp, 5; all well."

October 6: "Received five hundred dollars from Louisville Courier-Journal for distribution among destitute people in camp."

October 7: "Morning report. Present, officers, 6; guards, 11; employés, 42. Refugees arrived, 21; discharged, 4; remaining, 173. Fever camp, 3 convalescent; 2 new cases this morning."

October 8: "Morning report. Present, officers, 6; guards, 11; employés, 42. Refugees discharged, 23; remaining, 150. Fever camp, 5."

October 8: "Just received from Mayor Hewitt check for \$1,500 on account of Brewers' Exchange."

October 9: "Morning report. Present, officers, 6; guards, 11; employés, 42. Refugees arrived, 16; discharged, 17; remaining, 149. Fever camp, 6."

October 12: "Morning report. Present, officers, 5; guards, 11; employés, 42. Refugees arrived, 15; discharged, 35; remaining, 140. Fever camp, 6."

October 13: "Morning report. Present, officers, 5; guards, 11; employés, 42. Refugees arrived, 7; discharged, 21; remaining, 136. Fever camp, 6."

*Fernandina, Fla.*—Surgeon Ross, U. S. Navy, telegraphed as follows:

October 5: "Report for twenty-four hours ending 6 P. M., new cases, 17; deaths, none; under treatment, 28."

October 5: "Much more sickness here, principally among negroes, than is thought or reported. Howard Association has no more means than necessary for care of sick and needy. Number of latter large and increasing. Many infected houses and much infected bedding here which should be fumigated, disinfected, and some destroyed. Will

you furnish means for fumigation, disinfection, and compensation for articles destroyed, thereby greatly diminishing danger of trouble in future, especially next year."

This request was approved under certain restrictions.

October 8: "For twenty-four hours ending at 6 P. M., new cases, 23; deaths, none."

Surgeon Ross has been authorized to have a small house built on Tiger Island, near the entrance to the harbor, for the accommodation of crews of incoming ships while such ships are being overhauled and loaded in the city.

*St. Augustine, Fla.*—Dr. J. F. Hartigan, United States Sanitary Inspector, telegraphs as follows:

October 9: "Have been investigating here two days. Place healthy. Palatka to-morrow. Will report on so-called dengue."

*Palatka, Fla.*, October 11.—"Am at Palatka to-day. Place healthy. Leave for Seville to-morrow."

*Green Cove Springs, Fla.*—The following telegram has been received from Assistant Surgeon William Martin, U. S. Navy:

October 11: "During past two months twelve cases have occurred here and surrounding country, whose history warrants classification mild type yellow fever. One now under treatment convalescent. Typical case found last Sunday three miles in country, now convalescent. No deaths. Suggest employment of Dr. Merrill as sanitary inspector, six barrels of sulphur forwarded immediately, and employment of guards for isolation when necessary. Do not anticipate spread. Sanitary condition very good."

*Tampa, Fla.*—Sanitary Inspector M. B. Harrison, telegraphs:

October 13: "For week ending October 7, 1888, there were six new cases yellow fever at Palmetto. Total, 66; deaths, 1."

*Jackson, Miss.*—Dr. Wirt Johnston, Secretary State board of health, telegraphed:

October 4: "Situation unchanged this 6 P. M. Total cases to date, 14; deaths, 5."

October 5: "Situation unchanged this 6 P. M. Total cases to date, 14; deaths 5."

October 6: "Situation unchanged this 6 P. M. Total cases to date, 14; deaths, 5. Will not report again until a change, unless desired."

*New York, N. Y.*—The following letters have been received:

HEALTH DEPARTMENT OF THE CITY OF NEW YORK,  
*President's Office, New York, October 3, 1888.*

SIR: In reply to your letter of September 27, I have pleasure in sending you the clinical history of the case of the late Prof. Proctor.

I do not think it would be proper for me to express an individual opinion as to whether or not the case was one of yellow fever. I can only say that I was warranted in so considering it by the concurrent opinions on which the action of this Department was based. Among those acquainted with the facts and qualified judgment, I am not aware that any difference of opinion exists as to the nature of Professor Proctor's disease. As bearing upon the subject of your official inquiry I deem it proper to say that Professor Proctor stated that refugees from infected districts had arrived at Oak Lawn before he left. Mr. Geo. Wilson, a neighbor and friend, who brought Mrs. Proctor to New York, denies the correctness of Professor Proctor's statement on this point, concerning which we have no other evidence. The Professor could not remember the names of the railroads over which he traveled from Oak Lawn to this city.

Respectfully,  
(Signed): JAMES C. BAYLES,  
President.

*Clinical history of the case of Richard A. Proctor.*

Richard A. Proctor, aged 53 years, was taken sick, according to his statement, Friday, September 7, 1888, with several slight chills. On this date he was at his home in Oak Lawn, Fla. Saturday, September 8, he started for New York city by railroad, arriving at the Westminster Hotel, Irving Place and Sixteenth street, Monday, September 10. From the initiatory chills until he was seen by Dr. George W. Conant of New York at 8 a. m. Tuesday, September 11, he stated that he "felt mean," and was feverish continually; also that he had vomited several times on Sunday while in sleeping-car en route from Florida. During the evening of Monday, September 10, he was found by one of the porters attached to the Westminster Hotel, asleep on a hall floor. Thinking him intoxicated, the porter roused and accompanied him to his room, placing him on the bed in his clothes, where he remained until the following morning, when he was seen by Dr. Conant at 8 a. m.

Dr. Conant found him in a semi-conscious condition, pulse, 130; temperature,  $100\frac{1}{2}$  in mouth. He complained of slight headache, nausea, and uneasy feeling in back. He stated also that he had been subject to attacks of malaria, and believed from experience that he was suffering from such an attack.

At 10 a. m., same day, Dr. Conant notified the Division of Contagious Diseases of the Health Department, and at 11 a. m. Dr. Cyrus Edson, of the Health Department, saw him with Dr. Conant. He was still in semi-conscious condition, but when roused, talked and answered questions rationally. His skin was hot and dry. Temperature, 103; pulse, 136, and weak; respirations, 22.

He complained of nausea, and vomited food and drink given him. His eyes were injected and glistening. Conjunctivæ jaundiced, skin slightly so, facies anxious. Percussion and palpitation showed small liver and normal spleen. No abdominal tenderness, and no ileo-cæcal gurgle. On being requested to do so, he passed about 6 ounces of dark urine, which was found to contain blood, hyaline and granular casts, and about 15 per cent. per volume of albumen.

At 3.15 p. m. same day he was seen by Drs. A. Jacobi and Conant. His mental condition was then better, temperature  $101\frac{1}{4}$ , pulse 104 and



very weak, threatening syncope. The second sound of the heart was faintly audible over sternum, but could not be heard elsewhere over the chest walls. A specimen of urine passed at this time was examined, and found to contain hyaline casts and  $\frac{8}{10}$  per cent. per volume albumen.

At 5 p. m. his temperature, taken by Dr. B. McCann, of health department, who remained with him as nurse, was found to be normal.

At 9 p. m. he was again seen by Doctors Jacobi and Conant. His condition was much improved. Temperature normal, pulse 88, and stronger. He was very talkative; spoke of his family, &c. He complained of acidity of stomach, and said if he could only get rid of it he would feel well.

At 12.45 a. m., September 12, he was removed by Dr. Edson with great care on cot to ambulance, to Willard-Parker Hospital. At time of removal his condition was still better, pulse strong. He protested against being carried, and declared that it was ridiculous to carry him, as he felt perfectly strong and well, and would walk back in the morning. He was accompanied in ambulance by Dr. Edson, and talked freely during the ride.

At the hospital he was placed in a private room, and expressed himself pleased with the change from the hotel. His pulse was then 112, and strong. He passed a comfortable night with Dr. Priest, house physician, and a nurse in attendance.

At 11 a. m., September 12, he was seen by Drs Jacobi, Edson, and Priest. He was comatose, and had been so since 6 a. m. Skin covered with perspiration, slightly more jaundiced than on preceding day, temperature  $103\frac{1}{4}$ , pulse 136, respiration, 25; some pulmonary œdema; pupils dilated slightly, and responded sluggishly to light. His urine was drawn by means of catheter, and was found to contain a marked trace of albumen. His condition continued same until 7.15 p. m., when he suddenly vomited about a pint of characteristic coffee-grounds matter, and died in three minutes thereafter.

Dr. Priest reported that the last attack of vomiting was projectile, and that a tonic convulsion of the muscles of the face, neck, and upper extremities occurred at the moment of dissolution.

CYRUS EDSON, M. D.,

*Chief Inspector, Division of Contagious Diseases.*

HEALTH DEPARTMENT, CITY OF NEW YORK,

*President's Office, New York, October 9, 1888.*

SIR: In compliance with your request of October 5, I have the honor to inclose a copy of the autopsy in the case of Prof. Proctor.

The report giving full details of the examination of the organs has not yet been received.

Respectfully,

(Signed):

J. C. BAYLES,

*President.*

*Report of Necropsy.*

NEW YORK, September 16, 1888.

In accordance with your request, an autopsy on the body of Prof. R. A. Proctor was made by us at 2.30 p. m. to-day, at North Brother's Island, and we submit the following preliminary report:

Decomposition was so far advanced that it was impossible to arrive at a definite conclusion as to the cause of death.

The organs presented no evidence whatsoever of pernicious remittent fever, or other form of malarial disease, such as, even in the condition of decomposition presented by the body, would ordinarily be apparent.

The only positive change due to disease which could be made out was in the kidneys, which showed the appearance of old, though not advanced, disease.

The alterations produced in the body by yellow fever are usually of such character as to be nearly or completely obliterated by advanced decomposition.

We are, therefore, only able to say in this connection that there was no other evident cause of death, and nothing which would be incompatible with death from that disease. The final conclusion as to the cause of death must, therefore, in our opinion, be largely based upon the clinical history.

(Signed):

T. MITCHELL PRUDEN, M. D.,

HERMANN M. BIGGS, M. D.,

*Pathologists to the Health Department of New York City.*

Hon. JAMES C. BAYLES,

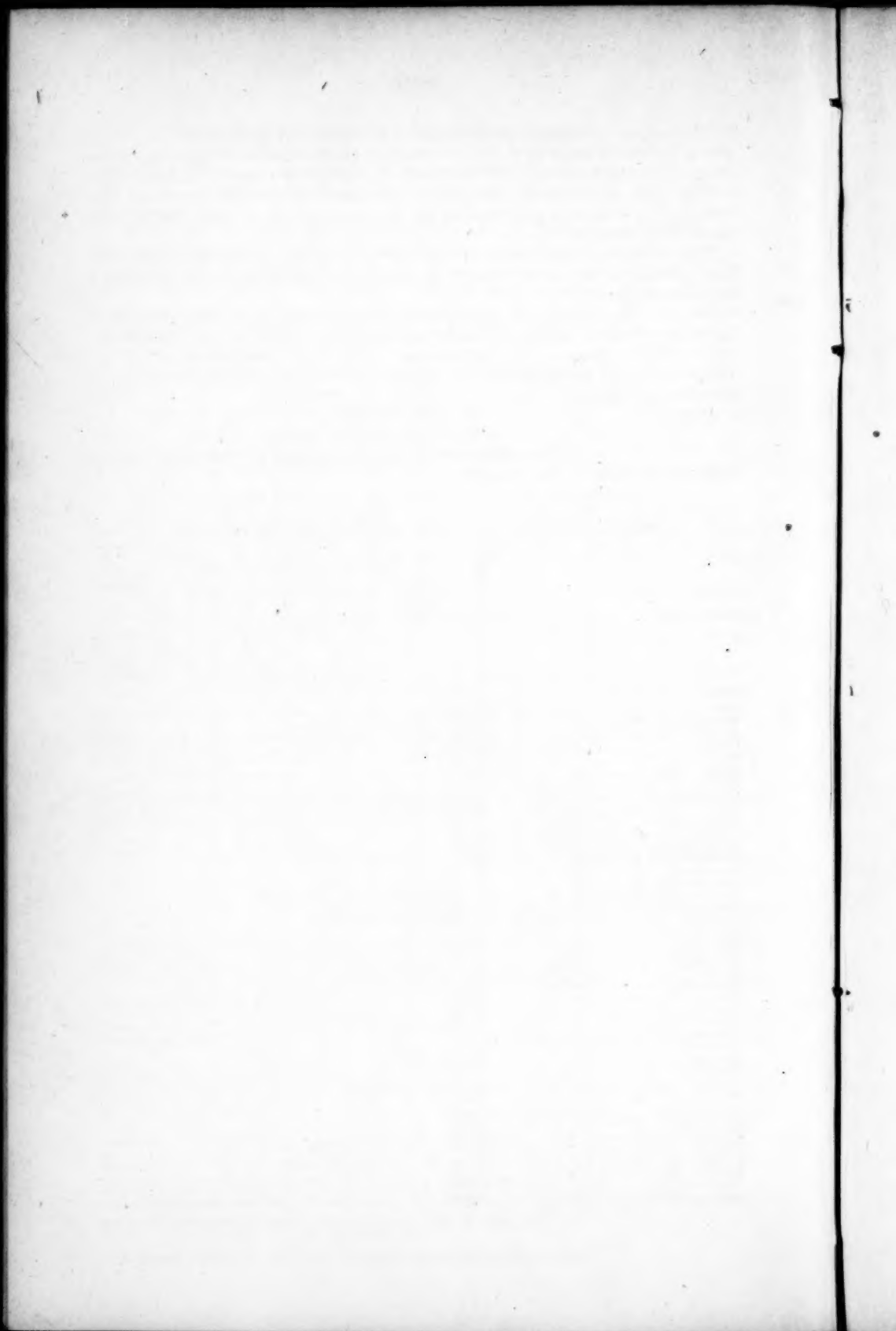
*President of the Health Department, New York City.*

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Variceloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
New York, N. Y.	Oct. 6.	1,538,164	621			1			12	10	15	9	16
Philadelphia, Pa.	Oct. 6.	1,016,758	344						13	7	5		3
Brooklyn, N. Y.	Oct. 6.	805,855	307						5	4	8		5
Chicago, Ill.	Oct. 6.	800,000	286						13	6	16		4
Baltimore, Md.	Oct. 6.	431,879	158						7		4		5
Boston, Mass.	Oct. 6.	415,000	20						10		9	1	
San Francisco, Cal.	Sept. 28.	350,000	91						5		4		
Cincinnati, Ohio.	Oct. 6.	255,139	107						2		1		
New Orleans, La.	Sept. 29.	248,000	113								6		3
Pittsburgh, Pa.	Oct. 6.	230,000	82						6	1	4		3
Washington, D. C.	Sept. 29.	225,000	92						7		2		4
Washington, D. C.	Oct. 6.	225,000	96						4		1		5
Milwaukee, Wis.	Oct. 6.	195,000	68							2			
Kansas City, Mo.	Sept. 29.	180,000	44						4		1		
Kansas City, Mo.	Oct. 6.	180,000	45						8		1		
Rochester, N. Y.	Oct. 6.	120,000	39						1		1		
Detroit, Mich.	Oct. 6.	116,340	78						4	1	6		1
Richmond, Va.	Oct. 6.	100,000	49								5		1
Denver, Colo.	Oct. 5.	96,000	37						5				
Columbus, Ohio.	Oct. 6.	93,000	20						4		2		
Toledo, Ohio.	Oct. 5.	80,000	6										
Evansville, Ind.	Oct. 6.	53,000	15						1				
Nashville, Tenn.	Oct. 6.	65,153	24						1		1		
Fall River, Mass.	Oct. 6.	65,000	28						5	1	1		
Charleston, S. C.	Oct. 6.	60,145	44						1		1		
Lynn, Mass.	Oct. 6.	50,000	17						2				
Council Bluffs, Iowa.	Sept. 29.	45,000	3										
Portland, Me.	Oct. 6.	40,000	14						2		1		
Manchester, N. H.	Sept. 29.	41,000	14						1		1		
Burlington, Iowa.	Sept. 26.	30,166	6										
Davenport, Iowa.	Oct. 6.	30,084	8								7		
New Albany, Ind.	Oct. 6.	30,000	4										
Altoona, Pa.	Sept. 29.	29,546	4										
New Bedford, Mass.	Oct. 6.	26,845	16										
Haverhill, Mass.	Oct. 6.	25,009	10										
Jackson, Mich.	Oct. 6.	22,500	4								1		
Poughkeepsie, N. Y.	Oct. 5.	22,000	9										
Newton, Mass.	Oct. 6.	21,105	8										
Newport, R. I.	Oct. 4.	20,466	7										
Pensacola, Fla.	Oct. 6.	15,000	5										

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 42. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., October 19, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended October 19, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended September 29 corresponded to an annual rate of 18.3 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Huddersfield, viz., 13.7, and the highest in Manchester, viz., 28.4 a thousand. Small-pox caused 1 death in Hull. Diphtheria caused 3 deaths in Manchester, and 2 in Bristol.

*London.*—One thousand three hundred and fourteen deaths were registered during the week, including measles, 30; scarlet fever, 22; diphtheria, 27; whooping-cough, 13; enteric fever, 13; diarrhoea and dysentery, 77. Diseases of the respiratory organs caused 213 deaths; different forms of violence, 61; and 13 suicides were registered. The deaths from all causes corresponded to an annual rate of 16.0 a thousand. In greater London 1,634 deaths were registered, corresponding to an annual rate of 15.4 a thousand of the population. In the "outer ring" the deaths included diarrhoea, 14; diphtheria, 7; scarlet fever, 6.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended September 29 in the 16 principal town districts of Ireland was 22.2 a thousand of the population. The lowest rate was recorded in Lurgan, viz., 0.0, and the highest in Dundalk, viz., 43.6 a thousand. In Dublin 165 deaths were registered, including measles, 1; enteric fever, 1; scarlet fever, 1; diarrhoea, 16; whooping-cough, 4; dysentery, 2; diphtheria, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week ended September 29 corresponded to an annual rate of 17.6 a thousand of the population, which is estimated at 1,314,274. The lowest mortality

was recorded in Perth, viz., 12.8, and the highest in Paisley, viz., 26.1 a thousand. The aggregate number of deaths registered from all causes was 444, including measles, 9; scarlet fever, 4; diphtheria, 6; whooping-cough, 4; fever, 8; and diarrhœa, 23.

*Denmark.*—The following is a translation of a Danish quarantine order of the 13th of September, 1888:

The proclamation of the Ministry of Justice, dated May 19, 1888, and ordering a general examination according to the law of July 2, 1880, section 2, paragraph 1, against ships coming from Grimsby, and the provisions against the importation of things mentioned in section 32 of the law are hereby discontinued. Quarantine will henceforth be discontinued. The provisions of section 2, paragraph 1, of the law of July 2, 1880, referring to precautionary measures against the introduction of contagious diseases into the kingdom, are hereafter to be enforced with reference to the following places:

Ports on the French coast between Nantes and St. Malo, both inclusive; Egersund; all ports in Chili; all ports in Florida; all ports in Jamaica; all ports in Martinique; all ports in Guadeloupe, St. Iago de Cuba; ports in the East Indies, Tonquin, and Cochin China; Triest; all ports in Egypt; ports on the Red Sea; Rio de Janeiro, and Havana.

The prohibition against the importation into the kingdom of used linen, used articles of clothing, and used bed-clothes, providing the articles named do not constitute the personal effects of travelers, waste, cotton or wool, refuse paper, hair and hides, remains in force in reference to the following places:

Ports on the French coast between Nantes and St. Malo, both inclusive; Egersund; all ports in Florida; all ports in Jamaica; all ports in Martinique; all ports in Guadeloupe, St. Iago de Cuba; all ports in the East Indies, Tonquin, and Cochin China, and all ports in Chili.

The prohibition against the importation into the kingdom of used linen, used articles of clothing, and used bed-clothes, providing the articles named do not constitute the personal effects of travelers, remains in force in reference to Rio de Janeiro and Havana. In addition thereto, special attention is to be paid to the cleansing, under official inspection, of linen, clothing, and bed-clothes brought from either of the last-named places as the personal effects of travelers.

*Montevideo, Uruguay.*—Four hundred and seventeen deaths were registered during the month of July, 1888, including small-pox, 33; typhus and enteric fever, 6; diphtheria, 52.

*Havana, Cuba.*—The United States sanitary inspector reports 10 deaths from yellow fever during the week ended October 6, 1888,



## MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
Paris .....	Sept. 27	2,260,945	873			1	10	5	13	12	3
Glasgow .....	Sept. 29	545,678	195				5	4	3		
Warsaw .....	Sept. 22	444,814	248			4		17	8		
Amsterdam .....	Sept. 22	389,916	157				1	1			
Amsterdam .....	Sept. 29	389,916	137				1	1	2		
Palermo .....	Sept. 29	250,000	76			2		3	1		
Genoa .....	Sept. 29	179,819	62						1		
Trieste .....	Sept. 15	154,500	71			7			3		
Trieste .....	Sept. 22	154,500	71			8			5		
Toronto .....	Oct. 5	130,000	34				1				
Toronto .....	Oct. 13	130,000	16				1				
Stuttgart .....	Sept. 29	125,510	41					1	1		
Bremen .....	Sept. 22	122,000	48					2			1
Mayence .....	Sept. 15	65,802	41				1		1		
Mayence .....	Sept. 22	65,802	35				1				
Merida .....	Sept. 24	48,121	57				1				
Callao .....	Sept. 8	34,000									
Paramaribo .....	Aug. 31	27,553	57								
Curacao .....	Sept. 29	25,000	5								
Vera Cruz .....	Oct. 4	23,800	24			2					
Gibraltar .....	Sept. 25	23,631	9			1					
Laguayra .....	Sept. 22	7,428	4			1					
Laguayra .....	Sept. 29	7,428	4								
San Juan del Norte .....	Sept. 17	500									

## UNITED STATES.

*Macclenny, Fla.*—The following has been received from Sanitary Inspector J. L. Posey :

In obedience to a telegraphic order received after completing my inspection of Orlando, Fla., I proceeded to investigate the origin and spread of a fever which had become epidemic at the town of Macclenny, Fla. This is a small town with an estimated population of 600 inhabitants, situated in Baker County, about thirty miles west of Jacksonville, on the line of the Florida Railway and Navigation Co.'s road. I arrived at Baldwin, where the tracks of this road intersect, nine miles distant from Macclenny. I reached my point of destination on the afternoon of September 9, the engineer refusing to approach nearer than half mile of the town. I was there met by Mayor D. J. Watkins and C. B. Macclenny, two of its prominent citizens. They escorted me to the office of the hotel, where I found Doctors James and Williams awaiting us. The general appearance of the town, which consists of perhaps a hundred stores and dwellings scattered over a rather large area, indicated a very wretched sanitary condition. The streets along the railroad track, as well as others, were covered with heaps of decaying sawdust and garbage of every description spread over them, drains obstructed, and open lots overgrown with weeds and rank vegetation. The floors and platforms of the depot buildings, passenger and telegraph offices, and their vicinity, were covered with lime, which had recently been thrown broadcast. A further stroll through the town revealed a similar deplorable sanitary state; the steps and front galleries, and porches and premises of residences lavishly

sprinkled with lime, and the yards filled with accumulated garbage. No organized measures had been adopted by the local health authorities to even ameliorate, much less correct, this unsanitary state of their town.

The site of the town is a low, flat, sandy plateau, without sufficient elevation to give effective drainage; the surrounding pine forests being interspersed with a series of marshes and alluvial basins. No attention had been given to the removal of excreta or their proper disinfection. The water supply is generally obtained from wells at a depth of fifteen or twenty feet, and is of a quality which I consider very unwholesome, having experienced personally its disagreeable effects. The atmospheric condition, resulting from such foul surroundings, was fully prepared to propagate the infectious material, which had been already introduced into the town, and had been gradually developing since the 1st of August. After an interview of over an hour with Messrs. Watkins, Macclenny, and Doctors James and Williams, I ascertained that previous to or about the 1st of August, Charles Corbett reached the town from Jacksonville, and within five days after his arrival was taken with slight chill, followed by a fever lasting seventy hours, with severe headache, pain in back and limbs, nausea, vomiting of coffee-ground fluid, and expired on the 8th of August with suppression of urine and uræmic coma; the body becoming, after death, of a deep yellow hue. The diagnosis in this case was bilious remittent fever. Corbett was a printer, and found employment in the office of the local newspaper, edited by the Rev. J. W. Folsom, and it was in this building that he died. Many of the residents visited Corbett during his illness, and the next death occurred in the family of the Rev. Folsom, in the person of Mrs. W. B. Folsom, who died August 25, with the same series of symptoms as those presented by that of Corbett. Then followed the cases of J. C. Smith, Alfred Snead, and N. G. Macclenny, all of whom after having had symptoms similar in every respect to the preceding cases, died with black vomit and suppression of urine, on the fifth and sixth days of their sickness.

The diagnosis of all these cases was that of "grave bilious fever," and the history of them was given me by their medical attendants. I inquired very diligently of the resident physicians whether they had kept any record of pulse and temperature of these cases, and if any tests had been made for albumen, and was informed that it had not been deemed necessary. Without further consultation, I accompanied Doctor Williams to visit some of his patients, and saw J. W. Macclenny, who was in "articulo mortis," having been sick five days. He presented, in a typical manner, all the physical signs and appearances of yellow fever. His garments and bed-linen were stained with black vomit, the face of a dusky bronze color, the brow and lower part of neck of a marked yellow hue, the eyes deeply injected, and of the familiar icteric color; the lips dry and fissured, teeth covered with bloody sordes, the gums and nasal apertures showing recent signs of hemorrhage; and a bloody froth flowing from the mouth. A more striking picture of this disease, in its hemorrhagic form, would be difficult, indeed, to find than that presented by this case. Death followed in this case at 6 o'clock that evening, the body turning of a deep yellow color. There were in an adjoining room of the same house three cases of children all in the first stages of yellow fever, the symptoms being well-marked. One of them, a boy of 12 years, in his

fourth day of fever, I visited on the morning of the 10th of September, and found by careful test 30 per cent. of albuminous deposit in the urine. This boy died on the 11th. In company with Doctor James, I saw quite a number of cases all presenting unmistakable symptoms of yellow fever; one a lady, whose name I failed to record, in a most critical condition, with coffee-grounds vomit, scanty urine, and signs of uræmic poisoning.

I next saw with Dr. George E. Shuey the cases of George Miller and Mrs. Kersey, who were in a hopeless condition, both presenting a striking counterpart of cases already seen. I visited these two persons again the following morning and found them with subsultus tendinum, suppression of urine, and in a comatose state; both dying, as I saw from the reports on the 11th of September. I went from house to house and found the sick and dying huddled together in small rooms, with windows and doors closed, the floors sprinkled with chloride of lime, carbolic acid, and a variety of other disinfectants. The oppressive odor of disinfectants mingling with the close atmosphere of the sick rooms, laden with the emanations from the excreta and ejecta of the patients, together with the dreadful visages of the dying, was shocking to every sense, and the scene well calculated to appal the stoutest hearts. I have seldom witnessed a more pitiable and melancholy sight than that presented to my view in my house-to-house inspection through this desolate scourge-swept town. As I returned to the hotel in the evening, I met many whose pale, wan features, languid air, and step marked them as convalescents from the disease, and others who, with anxious look, approached me, and, in whispered tones, asked to know my opinion of the prevailing fever. I told them that they must escape with the rising sun, or, remaining, fall victims to yellow fever. The following morning at the time of my departure the panic-stricken populace were moving away in every direction, my great regret being that it was then impossible for them to reach Camp Perry. There were, at the time of my visit, 60 cases and had been 5 deaths from the 8th of August up to the 11th of September. The results of my investigation clearly show the importation of the disease from Jacksonville. The arrival of Corbett with infected baggage, and his subsequent death—the Sentinel office, where he died, became a focus, from which the disease gradually spread, invading successively every house up and down the street, and radiating thence to the front and rear of the village, until the entire place became infected. In view of the prevalence of so many undoubted and typical cases of yellow fever, the occurrence of 5 deaths and 60 cases in the course of thirty days, it seems to me incredible, that the resident practitioners had so signally failed to recognize or suspect the true nature of the disease. I was unable to obtain any reliable data from the health authorities, as no record is kept of vital statistics.

The following information was given me by Mayor D. J. Watkins: President board of health and mayor, D. J. Watkins; disposal of sewage, surface drainage; distance of cemetery from business center, 2 miles; burial permits, none issued; population, 400 white, 300 colored; mode of burial, 6 feet below surface; closets, open.

Quarantine established against Jacksonville August 9.

I cannot close this report of my investigations at Macclenny without expressing a profound feeling of indignation at, and condemnation of the conduct of the medical corps of the local board of health, whose

utter ignorance of the nature of the prevailing epidemic, and fatal delay in this matter, has resulted in the cruel sacrifice of the lives of so large a proportion of their citizens, wives, and children. A late report shows that there have been 189 cases out of an actual population remaining of 195; the deaths being 21 whites. Of the above number 160 were whites and 29 colored. There are now sick 11 white and 8 colored. I desire likewise to mention the cruel treatment to which this community has been subjected by the Florida Railway and Navigation Company's road that added to the existing horrors of a yellow fever epidemic. Their trains were run through the ill-fated village at a speed of fifteen miles an hour, cutting them off from all supplies of food and medicine; a condition which was found to exist when the relief committee reached the town.

Respectfully submitted,

J. L. POSEY, M. D.,  
U. S. Sanitary Inspector M.-H. S.

Doctor Posey himself contracted the fever at this town, as five days after his arrival at Camp Perry he was taken with the symptoms of yellow fever. As soon as the diagnosis was made clear he was removed to the fever hospital, where, under the care of Doctor Fag  t, he made a good recovery and returned to duty.

The following reports have been received from Dr. J. F. Hartigan, United States Sanitary Inspector:

*St. Augustine, Fla.*—In compliance with your instructions to make a sanitary inspection of St. Augustine, and other places in Florida, I have the honor to report that upon invitation, in company with Doctor Gary, president of the county's board of health compact, Dr. W. H. Cyrus and Mr. Canova, president and secretary of Putnam County board of health, I arrived at St. Augustine Monday. There we met the mayor and board of health. The different physicians of the city were also present at the conference to give their views on the reported prevalence of "dengue" or any other fever they were called upon to treat. Only one or two stated that they had seen cases of dengue of a mild type, but all were sure that no case of yellow fever had existed in the community. Next day, in company with Doctors Shine and Alexander, I saw several cases of this so-called dengue, but only in one was there any elevation of temperature. Yesterday I made a general tour of the city, personally inspecting every case or suspicious case of fever that I could find. Altogether I saw ten to twelve additional patients, white and colored, who had or were supposed to have dengue. I think probably that but few could have escaped my attention for everybody seemed anxious for the most thorough investigation, aiding me every way in my search. The utmost facilities and cordiality were also shown me by the authorities, and they, with the people, were gratified and felt secure at the action of the Surgeon-General in sending a sanitary inspector among them.

St. Augustine has peculiar interests, and it was resolved that the fair city, a resort for the opulent and health-seekers in the winter months, should not be under a shadow of suspicion. For this reason the most extraordinary measures have been adopted to exclude yellow fever. A double cordon of guards numbering 300 invests the city night and day



subject to military regulations, no one being allowed to enter from any direction. It was only at the meeting Monday (already referred to), that the quarantine, as regards express and freight, was removed against its sister city, Palatka, the absurdity of its establishment in the first place, being acknowledged by both parties.

The alarm of the people of Florida, at least in the sections so far visited, is extreme and astonishing, and the strict quarantine regulations, harsh and sometimes unnecessary, contribute to the panicky feeling. Several cases of hardship have come under my notice where male and female alike suffered, although coming from non-infected districts. This could have been avoided had some of the quarantine officers been men of ordinary discretion. But in times like these it is not always easy perhaps to find such. There is now a universal desire for a state board of health, and no doubt at the next biennial session of the Legislature, which will be in April, it will be speedily established. This will prevent hereafter, it is to be hoped, one county arraying itself against another, and meetings of excited citizens censuring their local health board one day, dictating to them the next, and then perhaps commending them. One thing more which will inspire confidence is, that the general government should supervise it all. Let it patrol the Gulf thoroughly and use the most repressive measures, if necessary, in preventing smuggling from Havana, and communication at least during the summer months.

Now as to this "dengue." I think it is a misnomer, or is but a common type of fever peculiar to the climate at certain seasons, and is easily managed. It does not follow the course laid down in the books; nor is it like the epidemic of dengue that prevailed at St. Augustine five years ago. Doctor Shine tells me that then it lasted the usual time—two to four weeks—and was characterized by an eruption and desquamation, with the "break-bone" feeling lasting a long time, sometimes being concentrated in a finger, an arm, or the eye-ball. There was often nausea but no vomiting. It was ushered in generally by a chill; quinine did not affect it, and there were no deaths. The prevailing winds being southeast and northeast, blowing from the Bahamas or Arctic regions, it is quite likely that meteorological causes enter as a factor, which, with night exposure in this situation, develop the disease. This is strengthened by the fact that it is best amenable to treatment by salacine, showing clearly a rheumatic as well as malarial tendency. I have not seen a case, with the possible exception of the one referred to with elevated temperature, that can be dignified as dengue. The "break-bone" symptoms and stiffness are mild; the majority do not go to bed at all, nor even take medicine, and they are generally attending to business in a few days.

Following are the deaths from all causes from May 1 to October 1, 1887 and 1888:

1887—May .....	11	1888—May.....	14
June .....	21	June .....	15
July .....	22	July.....	17
August.....	14	August.....	12
September .....	13	September.....	7
Total .....	81	Total.....	65

Of the number for 1887 there were 27 from zymotic diseases, 7 of them being cholera infantum. For 1888, zymotic diseases, 20; 8 from cholera infantum.



St. Augustine is an antique city, with narrow streets, and has much history. It is built on a peninsula, two miles from the ocean, between the Matanzas and St. Sebastian Rivers, and is the capital of St. Johns County. It is one hundred and sixty miles south of Savannah, thirty from Jacksonville, and is separated from the sea by Anastasia Island. The city has a ridge about its center, running north and south, gradually sloping east and west. The site is level, and is only five feet above the water. Its length is two miles and width half a mile. It is situated on a bed of coquina, which, on the island, crops out on the surface. This coquina rock is a clean shell, cemented together, and, with a sandy loam over it, makes a porous soil. The population is about 8,000, about one-fourth being colored. Forest trees of pine, live oak, and cypress surround the city, while all the tropical fruits, plants, and vegetables are grown in abundance. A sea-wall, one mile long, built of coquina and capped with granite, fronts the city, commencing at the ancient Fort Marion. The famous Ponce de Leon Hotel is also one of the principal attractions.

As far as I can learn there have been three epidemics of yellow fever in the history of the town.\* One was about 1830, the second 1840, and the last in 1877. The first case was not announced until November 9 of that year, although it was thought to have existed from October. The disease, which was supposed to have been introduced from Ferdinandina, lasted three weeks, there being about 50 deaths and over 250 cases.

Three railroads center in the town—the St. Johns River road, Palatka and St. Augustine, and Jacksonville, St. Augustine, and Halifax—thus putting it in direct communication with all points north and west.

The mean temperature for the year ending September 30, 1888, is as follows:

October, 1887.....	72. 09	April, 1888.....	70. 05
November, 1887.....	62. 49	May, 1888.....	74. 03
December, 1887.....	57. 39	June, 1888.....	Not given
January, 1888.....	57. 33	July, 1888.....	79. 82
February, 1888.....	60. 16	August, 1888.....	81. 77
March, 1888.....	60. 64	September, 1888.....	76. 90

Yearly average..... 68. 43.

The highest temperature, 93 degrees, occurred during the month of August, and the lowest, 30 degrees, in January.

The rain fall for the same period was 39. 85 inches, the heaviest being in February, 9.20 inches, and the lightest in January, 0.20 inches. The prevailing winds were southeast and northeast.

Mayor of the town, George S. Greenoe; president of county board of health (appointed by the Governor, same as in all counties of the State), Dr. J. K. Rainey.

Artesian water is the principal kind used. There are about 70 wells scattered through the city, averaging in depth 250 feet. The water is of a uniform character, with a strong sulphur odor; it is used for all purposes. These wells were first sunk six years ago, and the supply is unlimited. About ten per cent. of the population use cistern-water.

\* The annual report of this Bureau for 1873, pp. 80 and 81, states yellow fever occurred in St. Augustine in 1807, 1821, 1838, 1839, and 1841.—J. B. H.

There are no springs. Surface-wells were first used and are also pretty general; they are now beginning to be condemned, disease having been clearly traced to their use. Deeper surface-wells give purer water. One artesian well will supply fifteen or twenty families. This water is considered the most wholesome for drinking purposes, although there are many who cannot use it on account of its cathartic effect.

There are several private sewers carried out into deep water. By a resolution of the council, all sewers are ordered to be sunk at least 5 feet below the surface of low water. They are connected with the hotels, and many business houses and private residences. The other soil is carted off weekly, two miles north of the town, deodorized and sunk in pits of dry sand, 25 feet long and from 4 to 5 feet deep, and covered with sand. Plans have already been made for a general system of sewerage.

Burial permits are required in all cases; this rule is stringent. They are issued by the city clerk.

There are two cemeteries, the nearest half a mile from the center of town. This has been ordered to be closed, and arrangements for a new one, three miles south of the city, in an elevated locality, are completed. The other cemetery is situated two miles west of center of town on a ridge.

Respectfully submitted,

J. F. HARTIGAN, M. D.

*Palatka, Fla.*—Palatka, the county seat of Putnam County, is situated on the west bank of St. John's River, about twenty miles in a direct line from the sea, and one hundred miles by river. It is 15 feet above low water; its soil a sandy loam. The town was first incorporated in 1853. There is no history of yellow fever or other epidemic; only occasionally is there a case of so-called dengue, but it is very mild. The place is in all respects healthy. Four years ago it was visited by a disastrous fire which laid waste the entire business section, principally frame buildings; but the pluck and enterprise of its people soon replaced them with substantial brick structures.

On account of its favorable situation, and other advantages, Palatka has five railroads centering in it. Rigid quarantine is also established here against the fever. Eleven years ago there was an imported case in the town, but it was isolated, and the disease did not spread. The forest trees of the outlying districts are pine, oak, magnolia, and hickory; part of the town extends into a hummock country.

There is probably no place anywhere better supplied with water than Palatka. The water-works are situated on the edge of the town, near a large spring, which furnishes considerable overflow. On a hill adjacent is an iron stand-pipe 50 feet high, supplied with two pumping-engines. In case of fire this pressure is sufficient to throw a stream of water over their highest building. On account of its excessive hardness and large amount of residue, it is not recommended for domestic or boiler use. Another reason that it is not generally introduced is the expense. Artesian water is more popular, and a well can be sunk now much cheaper than formerly. Several of them are scattered over the city. Surface wells are used principally by the colored people, and, although considered unwholesome, the water does not seem to be injurious to them.

There are fewer private sewers here than in St. Augustine, but, like

that city, plans for a general system are already drawn up, which it is thought will soon be carried out. Holes are used in place of boxes in the privies; when full these are periodically emptied into others only a few feet off, which are dug for the purpose and then filled up.

Burial-permits are required in all cases, and are issued by the health officer. The death rate from May to October, I was unable to secure on account of imperfect records.

There are two cemeteries, both adjoining, half a mile from center of city, but they are separated from the city proper by a branch or rivulet.

The population of Palatka is 4,500, about equally divided as to color. Mayor, W. J. Webb; president county board of health, Dr. W. H. Cyrus.

Respectfully submitted,

J. F. HARTIGAN.

*Tampa, Fla.*—The following letter has been received from Dr. J. P. Wall, president board of health, under date of October 13, 1888.

I received a letter this morning from Governor Perry, relative to taking off the quarantine at Plant City—it seems that the people out there had written or petitioned him about it—and he stated that he had communicated what they wanted to you.

I would respectfully suggest that things be allowed to remain as they are at Plant City till the last of the present month, at least. If the cordon is removed and the unacclimated allowed to move into that place, there would be risk of getting the infection into it again from Tampa, even if it should have entirely disappeared from Plant City. As long as there is fever in Tampa, it would be best to keep Plant City closed against unacclimated people moving back into the place.

The weather appears to be getting cool, and I hope that by the end of the month we will be rid of the fever. Of course nothing positive can be prognosticated as to the end.

There are only 4 cases of fever in Tampa now, and 1 of these has been on hand since the 3d instant; 2 of them have albuminous urine; 1 is very yellow, and is mainly suffering now with inflammation of left parotid gland which will be likely to suppurate, 1 of these 4 cases only suspicious, taken sick last night; no deaths since night of the 7th instant; a total of 5 deaths since the 7th of August.

*Jacksonville, Fla.*—The following letter has been received from Dr. J. Y. Porter, in charge of Government relief measures, under date of October 10:

I would invite your attention to a copy of letter of my instructions to Doctor Echemendia, and also the general notification to the public of Jacksonville, on the subject of disinfection. I think they are both sufficiently plain so as not to be misunderstood in respect to any responsibility for destruction of infected material that may be destroyed at the request of the owners. It is my impression that the destruction of all infected material of the class enumerated in your letter to me of the 6th inst. should be made compulsory if it is the desire to rid the city of all fomites or germs. Anything short of compulsory destruction must make the whole matter a *farce* and a useless expenditure of money.

JACKSONVILLE, FLA., October 10, 1888.

*To the Public.*

The disinfection and fumigation of houses where cases of yellow fever have occurred, together with the staff, of which Dr. DeM. Echemendia is chief, having been transferred to the Marine-Hospital Service under my charge, the following will be the general rules regulating the same:

Disinfection of houses:

1. No general disinfection of houses will be practiced until after the close of the epidemic.
2. Requests to fumigate apartments will be honored in cases where the party making the requests signifies willingness to defray all expenses incident to the same.
3. Where parties are financially unable to perform the necessary cleaning of apartments after the discharge of a patient by recovery or death, or are unable to procure intelligent help, the fumigating staff will be instructed to perform the work.

Destruction of property:

1. Mattresses, pillows, comforts, and blankets, soiled by dejections from the sick to such an extent as to prevent their further use by any one else sick in the same house or family, should be destroyed at once by burning, which destruction will be done, at the request of the owners, by the Fumigating and Disinfecting Department of the Government Aid Bureau, on application to me. The Government will assume no pecuniary responsibility thereof.

Parties totally unable to sustain the loss of infected material of the character above cited, may expect to be reimbursed by the General Government, but no receipt for the articles stating that fact, can at present be given.

2. All applications for reimbursement for destruction of infected material must first pass through the Committee on Claims of the Citizens' Auxiliary Sanitary Association, fixing the valuation and particularly stating the question of impecuniosity of the owner, before they can be entertained by me and forwarded to the U. S. Marine-Hospital Bureau at Washington.

3. Articles of linen and cotton goods in use about the sick should be immersed in a solution of bi-chloride of mercury, afterwards boiled in the same solution, and, on the cessation of sickness in the family, again boiled in a similar solution and laundered.

4. On application to Dr. DeM. Echemendia, the solution of bi-chloride of mercury, referred to in paragraph 3, will be furnished free.

Inspection of houses preparatory to disinfection and fumigation:

1. The fumigating staff, under Dr. DeM. Echemendia, will visit each house from which cases of yellow fever have been reported to the board of health of Duval County, and will endeavor to ascertain the quantity of infected material therein, taking an accurate record of the same, and, to designate the articles at the close of the epidemic, will stamp them with the device—

“Yellow Fever Epidemic, 1888,”

and doubtless the citizens of Jacksonville will be sufficiently public-spirited to aid in the destruction of infected material, and to prevent



the secreting of any article which would, in the future, propagate this disease.

JOSEPH Y. PORTER, M. D.,  
*Surgeon in Charge Government Relief Measures.*

JACKSONVILLE, FLA., October 9, 1888.

DEAR SIR: The board of health of Duval County having transferred to Surgeon-General J. B. Hamilton, U. S. Marine-Hospital Service, the disinfecting of houses where yellow fever cases have occurred, in compliance with a telegram from him, I have taken charge of the fumigation of such premises, to date from the first instant, and of the fumigating staff of which you are the chief. You will please, therefore, observe the following instructions:

1. That until the epidemic ceases, and shall be declared at an end, by the Duval County board of health, no general disinfection of houses will be practiced.

2. On the discharge of a patient by recovery or death you will visit the house and recommend a cleaning of the character such as any good housewife would make. When the mattresses, blankets, and woolen goods in the room occupied or used by the sick are soiled to such an extent as to prevent further use by any other sick person in the same house, you will recommend that they be at once burned, and you can give a receipt for the articles, with the distinct understanding with the parties, however, which you will write or stamp across the face of the receipt, that the United States Government assumes no pecuniary responsibility in the destruction of these articles. Application for reimbursement for articles destroyed, by parties financially unable to bear the loss of the same, can be made to the Marine-Hospital Service at Washington through me. In no case when the parties are financially able to sustain the loss, can reimbursement be reasonably expected.

3. You will obtain a list of persons now sick, and who have been previously reported as having had yellow fever, from the president of the Duval County board of health, who will be requested to furnish you the same with their locations, and you will visit the house and will ask permission to stamp all mattresses, pillows, blankets, carpets, and woolen curtains with a stencil of "yellow fever," which will be furnished you, keeping an accurate record of the places visited and the articles stamped, with the names of the owners thereof. You will explain to the parties whose property this is, that infected material to be destroyed at the close of the epidemic, and that to those financially unable to sustain the loss, the General Government will be asked to reimburse, and a board of appraisers will determine the question of impecuniosity.

4. Articles of linen or cotton material in use about the yellow fever sick should be boiled after being used, in a solution of bi-chloride of mercury in the strength of 1:500.

Very respectfully, your obedient servant,

JOSEPH Y. PORTER, M. D.  
*Surgeon in Charge Government Relief Measures.*

DOCTOR ECHEMENDIA,

*Chief of Fumigating Staff in charge of the  
M.-H. Bureau, Jacksonville, Fla.*



*Jacksonville, Fla.*—Dr. J. Y. Porter telegraphs as follows:

October 13: "New cases to-day, 31; deaths, 3. Total cases reported, 3,526; deaths, 316. Patients, St. Luke's, 14; patients, Sand Hills, 33."

October 14: "New cases to-day, 18; deaths, 2. Total cases reported, 3,544; deaths, 313. Patients, St. Luke's, 13; patients, Sand Hills, 25."

October 15: "New cases to-day, 25; deaths, 3. Total cases reported, 3,569; deaths, 316. Patients, St. Luke's, 12; patients, Sand Hills, 19."

October 16: "New cases to-day, 58; deaths, 2. Total cases reported, 3,627; deaths, 318. Patients, St. Luke's, 16; patients, Sand Hills, 16."

October 17: "New cases to-day, 36; deaths, 3. Total cases reported, 3,633; deaths, 321. Patients, St. Luke's, 12; patients, Sand Hills, 16."

October 18: "New cases to-day, 29; deaths, 1. Total cases reported, 3,692; deaths, 322. Patients, St. Luke's, 14; patients, Sand Hills, 16."

October 19: "New cases to-day, 27; deaths, 4. Total cases reported, 3,719; deaths, 326. Patients, St. Luke's, 12; patients, Sand Hills, 18."

*Camp Perry, Fla.*—Surgeon W. H. H. Hutton reported as follows:

October 14: "Morning report: Present, officers, 5; guards, 11; employés, 42. Refugees arrived, 9; discharged, 32; remaining, 113. Fever camp, 6; all convalescent. No new cases in 8 days."

October 15: "Morning report: Present, officers, 5; guards, 11; employés, 42. Refugees arrived, 2; discharged, 20; remaining, 95. Fever camp, 5; all convalescent."

October 16: "Morning report: Present, officers, 6; guards, 11; employés, 44. Refugees arrived, 12; discharged, 24; remaining, 83. Fever camp, 5. Ten nurses start for New Orleans to-day."

October 17: "Morning report: Present, officers, 6; guards, 11; employés, 44. Refugees arrived, 12; discharged, 19; remaining, 76. Fever camp, 5."

October 18: "Morning report: Present, officers, 6; guards, 11; employés, 47. Refugees arrived, 7; discharged, 15; remaining, 82. Fever camp, 5."

*Gainesville, Fla.*—Dr. N. D. Phillips, president board of health, telegraphs as follows:

October 13: "We have 2 new cases to-day developed in different parts of the city. The outlook is not good."

October 15: "Two more new cases have developed here this afternoon. We have declared the fever epidemic."

Assistant Surgeon Wm. Martin, U. S. Navy, telegraphs as follows:

October 18: "To date there have been 16 cases yellow fever, 6

deaths. Examined carefully 3 cases now under treatment; doing nicely. No new cases since October 15th."

*Green Cove Springs, Fla.*—Assistant Surgeon Martin, United States Navy, telegraphs as follows:

October 13: "No new cases in four days."

*Palmetto, Fla.*—Dr. W. B. Harrison, United States sanitary inspector, telegraphs as follows:

October 17: "For week ending October 14, there were at Palmetto, Fla., 10 new cases yellow fever; deaths, 1. Total number of cases to date, 76; total number of deaths to date, 7."

*Orange City Junction, Fla.*—Dr. B. F. Fox, United States sanitary inspector, reports as follows:

October 13: "Towns between New Smyrna and St. Augustine all healthy; no yellow fever. I go to Titusville to-day."

*Titusville, Fla.*, October 14: "Titusville healthy; no yellow fever. I start for St. Augustine by next train."

*Deland, Fla.*—Dr. J. F. Hartigan, United States sanitary inspector, reports as follows:

October 14: "Arrived here yesterday; place healthy. Leave for Sanford this evening."

October 16: "Have investigated Sanford and this place; both healthy. Leave for Orlando to-morrow."

October 18: "Am at Orlando to-day; place healthy. Leave for Kissimmee to-morrow."

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enterie fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Oct. 13.	1,539,036	702						15	19	18	11	17
Philadelphia, Pa.	Oct. 13.	1,016,758	333						17	4	4		3
Baltimore, Md.	Oct. 13.	431,879	147						3	3	2		2
Boston, Mass.	Oct. 13.	415,000	186						11		15		4
San Francisco, Cal.	Oct. 5.	330,000	87			1			5				
Cincinnati, Ohio.	Oct. 13.	255,000	83						3		6		1
New Orleans, La.	Oct. 6.	248,000	114										
Pittsburgh, Pa.	Oct. 13.	230,000	64						2		8	1	1
Cleveland, Ohio.	Sept. 15.	227,861	96						3	2	1		3
Cleveland, Ohio.	Sept. 22.	227,861	76						8		6		1
Washington, D. C.	Oct. 13.	225,000	110						9		2		4
Milwaukee, Wis.	Oct. 13.	195,000	56						2	2	1		1
Kansas City, Mo.	Oct. 13.	180,000	42						2				
Minneapolis, Minn.	Oct. 13.	180,000	64						9		7		1
St. Paul, Minn.	Oct. 6.	175,000	50						7		5		1
St. Paul, Minn.	Oct. 13.	175,000	43						4		3		
Newark, N. J.	Oct. 9.	174,954	65						2		3		
Rochester, N. Y.	Oct. 13.	120,000	53						6	1			
Detroit, Mich.	Oct. 13.	116,340	65						6		6		3
Richmond, Va.	Oct. 15.	100,000	34						1		1		
Denver, Colo.	Oct. 12.	96,000	29						7	1	1		
Columbus, Ohio.	Oct. 13.	93,000	32						5		2		
Toledo, Ohio.	Oct. 12.	80,000	21						1				
Nashville, Tenn.	Oct. 13.	65,153	13						2				
Fall River, Mass.	Oct. 13.	65,000	33						4				
Charleston, S. C.	Oct. 13.	60,145	36						3				
Galveston, Tex.	Oct. 5.	40,000	17								1		
Portland, Me.	Oct. 13.	40,000	11										
Mobile, Ala.	Oct. 13.	40,000	21										1
East Saginaw, Mich.	Oct. 6.	33,000	10										
East Saginaw, Mich.	Oct. 13.	33,000	6										
Burlington, Iowa.	Oct. 10.	30,166	3										
Davenport, Iowa.	Oct. 13.	30,084	14						1		2		
New Albany, Ind.	Oct. 13.	30,000	4										
Altoona, Pa.	Oct. 6.	29,546	1										
New Bedford, Mass.	Oct. 13.	26,845	13										
Auburn, N. Y.	Oct. 13.	26,000	11										
Haverhill, Mass.	Oct. 13.	25,000	9						1	1			
Poughkeepsie, N. Y.	Oct. 12.	23,000	7								1		
Jackson, Mich.	Oct. 13.	22,500	9										
Pensacola, Fla.	Oct. 13.	15,000	5						1				

JOHN B. HAMILTON,  
*Supervising Surgeon-General, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 43. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., October 26, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended October 26, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended October 6 corresponded to an annual rate of 18.2 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Nottingham, viz., 13.1, and the highest in Manchester, viz., 29.8 a thousand. Small-pox caused 1 death in Preston. Diphtheria caused 5 deaths in Manchester, 2 in Birmingham.

*London.*—One thousand three hundred and fifty-two deaths were registered during the week, including measles, 39; scarlet fever, 24; diphtheria, 35; whooping-cough, 5; enteric fever, 8; diarrhœa and dysentery, 72; typhus fever, 1. Diseases of the respiratory organs caused 229 deaths; different forms of violence, 51; and 8 suicides were registered. The deaths from all causes corresponded to an annual rate of 16.5 a thousand. In greater London 1,680 deaths were registered, corresponding to an annual rate of 15.9 a thousand of the population. In the "outer ring" the deaths included diarrhœa, 23; diphtheria, 6; fever, 7; whooping-cough, 7.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended October 6 in the 16 principal town districts of Ireland was 18.9 a thousand of the population. The lowest rate was recorded in Wexford, viz., 4.3, and the highest in Armagh, viz., 46.5 a thousand. In Dublin 158 deaths were registered, including measles, 2; enteric fever, 3; scarlet fever, 2; diarrhœa, 18; whooping-cough, 7; dysentery, 1; typhus fever, 1.

*Bocas del Toro.*—The United States consul at Colon in his dispatch dated October 3, 1888, states that Bocas del Toro is altogether free of any epidemics.

*Santiago de Cuba.*—Thirteen deaths from yellow fever are reported



for the month of August, 1888, and 17 for the first 15 days of September. Two thousand three hundred and seventy-seven deaths were registered during the year 1887, including yellow fever, 236, and small-pox, 979.

*Cardenas.*—Consular sanitary report of October 12, 1888, states: "Good health in town and harbor."

*Vera Cruz.*—The United States consul in his report for the week ended October 11, 1888, states that the city may be considered fairly healthy, as one death of yellow fever is reported 11th instant, but some of the physicians say it is not yellow fever.

*Palermo.*—Two deaths from small-pox are reported for the month of September, 1888.

*Trapani.*—One hundred and ninety-five deaths from small-pox are reported for the month of September, 1888—almost all children not vaccinated.

*Guaymas, Mexico.*—Consular sanitary report dated September 30, 1888, states: "No particular or epidemical sickness in consular district. Sanitary condition good."

*Marseillès, France.*—Eight hundred and fifteen deaths were registered during the month of September, 1888, including cholera sporadic, 1; small-pox, 4; enteric fever, 56; scarlet fever, 1; diphtheria and croup, 26; and measles, 4. The consul in his report dated October 5, 1888, states that the health of the city is excellent, the average mortality for the month being 3 per diem below the normal rate—an excellent result for September.

*Manila, Phillipine Islands.*—The United States consul, in his dispatch dated September 12, 1888, states that "the disease which was officially declared to be cholera, and which made its appearance at the village of Taytay, 8 miles northwest of Manila, about the middle of last month, and subsequently seemed to have found a strong foothold in this city, has so far subsided that there is very little apprehension of a serious epidemic.

"Although able and experienced physicians declare unhesitatingly that the disease was Asiatic cholera in its most malignant form, the accuracy of the diagnosis is now quite generally doubted, and this doubt is very materially strengthened by the facts in the case. At no time were the authorities willing to consider the trouble epidemic, and declare the port 'dirty,' and the number of deaths did not increase with that fearful rapidity characteristic of this terrible plague.

"It now appears that just before the sickness broke out at Taytay, a large consignment of rice, which had been stored in a damp place and soured, was sold among the native shops of the village by some specu-



## UNITED STATES.

*Barton, Fla.*—Dr. J. F. Hartigan reported, under date of October 20, 1888, as follows :

I arrived at DeLand on the 14th of October, and in compliance with your instructions have the honor to report as follows :

DeLand, the county seat, is situated near the geographical center of Volusia County, on a pine ridge 50 feet above the level of St. John's River, its nearest water-course, and 5 miles distant from the same. It is 25 miles from the ocean. Like many other Florida towns of advantageous situation, its development has been rapid and recent. Two years ago a disastrous fire occurred, which destroyed a majority of the business houses, but within a few months the burnt portion was rebuilt with brick buildings. Orange culture is the principal industry.

The town is about three miles from the main line of the Jacksonville, Tampa and Key West Railroad, with which it is connected by a branch line. Another road is being constructed to extend to the Blue Springs, Orange City and Atlantic. The spirit of progress has struck this place in other ways. With a population of only 2,000, the town has an electric light company, an ice factory, a model dairy, and the DeLand University, organized under special charter.

Filtered cistern water is mainly used for cooking and drinking purposes ; surface wells are also pretty general, but during a drouth many who use them are attacked with dysentery. Mild cases of typhoid are also observed at such times, especially where there is carelessness in depositing slops and garbage. Efforts have been made to furnish the town with artesian water. About five hundred feet have been bored, and water found, but there is not enough pressure to bring it to the surface. Work is at present suspended, but it will soon be resumed with steam-power, when it is thought the necessary supply can be obtained.

The night-soil is carted off a mile from town to a low place, disinfected and dumped, then covered over with sand.

No burial permits are required. The number of deaths from May to October could not be ascertained, but it is safe to say they were below the average. There are two cemeteries—one, 1½ miles; the other, 3 miles from town.

Mayor—F. S. Goodrich.

Health Officer—Dr. R. H. Gillen.

*Tampa, Fla.*—Dr. J. P. Wall, president board of health, in his report dated October 17, 1888, states that "during the week ended to-day I have seen 2 cases of yellow fever—both mild—and 2 have been reported, making a total of 4 cases for the week. \* \* \* No new cases since Sunday, the 14th instant. \* \* \* I do not think that there is much more material here for the fever, and as there are very few refugees to return I hope that the fever is about done. \* \* \* The fever here has been of a remarkably mild type this season, not over 20 cases having albuminous urine, and only 5 deaths, as already reported. \* \* \* Judging by the coolness of the weather this month, I think that we

will likely have a pretty cool winter as compared with last; and if the fever does not hybernate in some obscure village again where its presence is denied, I think that we will get rid of it."

*St. Augustine, Fla.*—Dr. B. F. Fox telegraphed as follows, October 18 :  
"I have thoroughly inspected St. Augustine. No yellow fever, no suspicious case. Will wait orders."

*Bartow, Fla.*—Dr. J. F. Hartigan telegraphs as follows, October 20 :  
"Just arrived here; have investigated Orlando and Kissimmee; both healthy. Will mail report to-morrow."

October 22 : "Bartow healthy; will be at Fort Meade Wednesday."

*Palatka, Fla.*—Surgeon W. H. H. Hutton telegraphs as follows :

October 23 : "Three cases and 1 death reported at Enterprise, opposite Sanford. Have instructed Carlisle, secretary board of health, to isolate cases. Will send Posey there to-morrow."

*Palmetto, Fla.*—Dr. M. B. Harrison telegraphs as follows :

October 23 : "For 8 days ending 6 p. m. Monday, October 22, there were at Palmetto new cases of yellow fever, 3; deaths, none. Total number cases to date, 79. At Manatee, new cases, 1; deaths, none. Total number cases to date, 41."

*Gainesville, Fla.*—Assistant Surgeon Martin telegraphs as follows :

October 20 : "Two new cases (colored)."

October 21 : "One new case, D. Silghman (white)."

October 23 : "One new case, Doctor N. D. Phillips."

*Camp Perry, Fla.*—Surgeon W. H. H. Hutton telegraphs as follows:

October 19 : "Morning report. Present: Officers, 6; guards, 11; refugees arrived, 7; discharged, 15; remaining, 82; employés, 44. Fever camp, 5. Dr. Posey instructed to fumigate and disinfect Callahan."

October 20 : "Morning report. Present: Officers, 6; guards, 11; refugees arrived, 23; employés, 43; discharged, 11; remaining, 94. Fever camp, 6."

October 20 : "To-day completes two months at Camp Perry; 810 refugees from infected points have been received; 721 have been discharged; 25 cases of fever developed; 1 death September 9; not a case contracted in camp. Our 60 unacclimated employés, 5 of whom have been two months in fever camp, not a single case of fever of any kind among them. Not a known case of fever reported from the 721 cases discharged and scattered to all parts of the country. In view of these facts, how any sanitarians can consider Camp Perry as an infected place is incomprehensible. Doctors Faget and Posey, of New Orleans, Guitéras, and Geddings give this their emphatic indorsement."

October 21 : "Morning report. Present: Officers, 6; guards, 11; em-

ployés, 37; refugees arrived, 15; discharged, 5; remaining, 104. Fever camp, 6."

October 22: "Morning report. Present: Officers, 6; guards, 11; employés, 37; refugees arrived, 7; discharged 6; remaining, 105. Fever camp, 2 sick; 6 convalescent."

October 23: "Morning report. Present: Officers, 6; guards, 11; employés, 35; refugees arrived, 11; discharged, 9; remaining, 107. Fever camp, sick, 2; convalescent, 6."

October 24: "Morning report. Present: Officers, 6; guards, 11; employés, 35; refugees arrived, 32; discharged, 8; remaining, 131. Fever camp, 5; sick, 2; convalescent, 3."

*Jacksonville, Fla.*—Dr. J. Y. Porter telegraphs as follows:

October 20: "New cases to-day, 50; death, 1; total cases reported, 3,769; deaths, 327. Patients, St. Lukes, 12; patients, Sand Hills, 20. Legal authorities of city and county request the aid of the Government to prevent refugees returning, and by formal resolution this evening relinquished to me, as your agent, all their rights in premises, and ample power to use measures to keep people out. Accordingly I have put on an armed mounted cordon on county roads, and will notify railroad companies. Request confirmation of my action."

October 21: "New cases to-day, 27; deaths, 4; total cases reported, 3,796; deaths, 331. Patients, St. Lukes, 13; Sand Hills, 20."

October 22: "New cases to-day, 43; deaths, 1; total cases reported, 3,839; deaths, 332. Patients, St. Lukes, 10; Sand Hills, 20."

October 23: "New cases to-day, 33; death, 1; total cases reported, 3,872; deaths, 333. Patients, St. Lukes, 9; patients, Sand Hills, 17."

*Fernandina, Fla.*—Dr. Ross telegraphs as follows:

October 24: "Report for 24 hours ending 6 p. m.: Ten new cases, two white; one death, Victoria Cumlandu (white), aged 10."

*Jacksonville, Fla.*—Dr. J. Y. Porter telegraphs as follows:

October 24: "New cases, 31; deaths, 4; total cases, 3,903; deaths, 337. Patients, St. Lukes, 10; patients, Sand Hills, 16."

Doctor Wylle in Sanford writes, "Yellow fever in Enterprise, Fla. Eight cases now, 2 deaths lately. Orange county has cordon of 30 men."

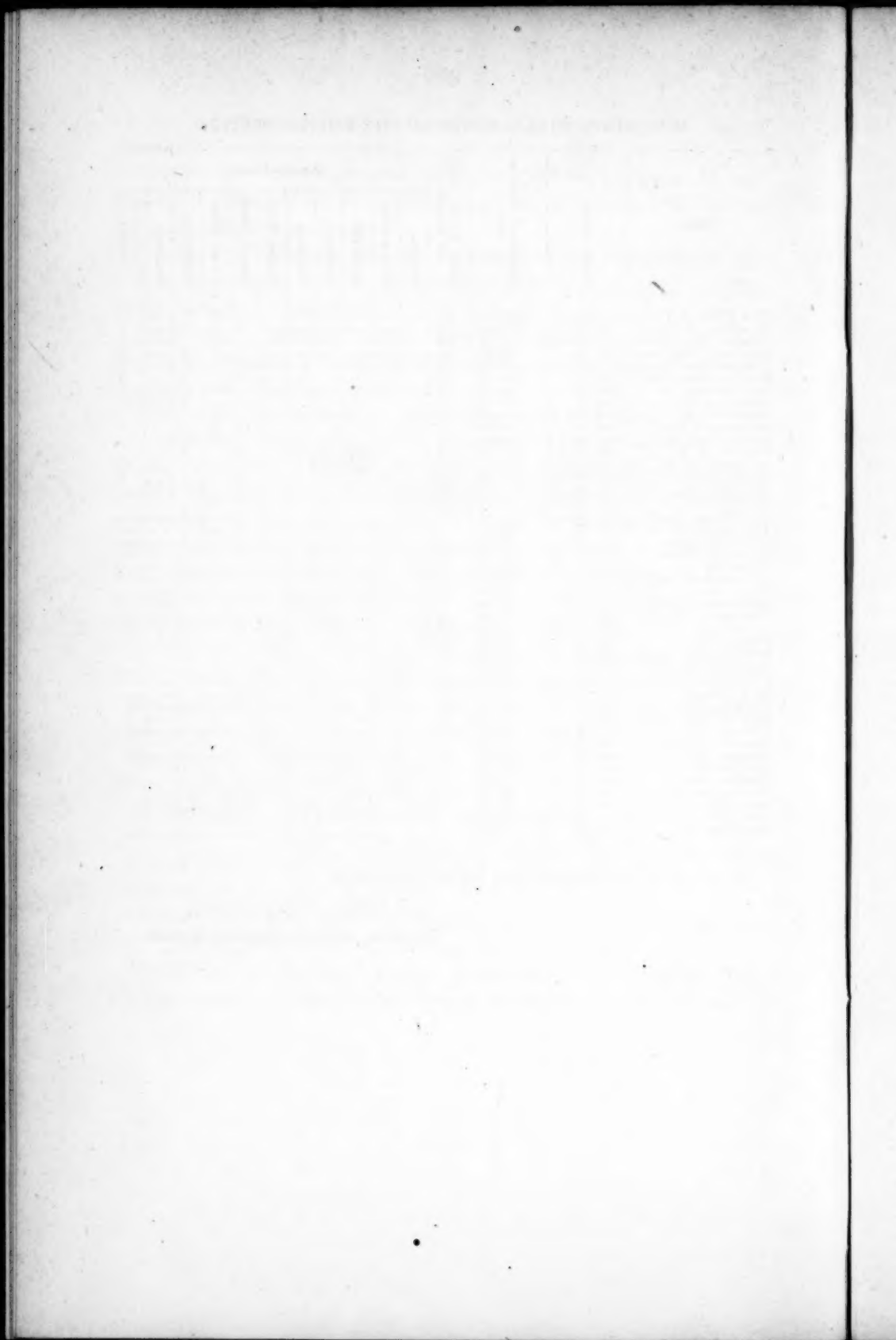


## MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Oct. 20.	1,539,908	661						12	16	18	9	12
Brooklyn, N. Y.	Oct. 13.	805,855	284						8	7	8		8
Chicago, Ill.	Oct. 20.	800,000	233										
Baltimore, Md.	Oct. 20.	431,879	139						4	1	8		3
Boston, Mass.	Oct. 20.	415,000	100						11	1	11		1
San Francisco, Cal.	Oct. 12.	300,000	122						3		10		2
New Orleans, La.	Oct. 13.	248,000	76						1		2		
Cleveland, Ohio.	Oct. 6.	227,861	58						7		4		
Louisville, Ky.	Oct. 20.	200,000	55						2	3	1		
Milwaukee, Wis.	Oct. 20.	195,000	39						7		1		
Kansas City, Mo.	Oct. 20.	180,000	76						6		8		
Newark, N. J.	Oct. 16.	174,954	78						1				
Rochester, N. Y.	Oct. 20.	120,000	42						4				1
Detroit, Mich.	Oct. 20.	116,340	26						1				
Richmond, Va.	Oct. 20.	100,000	8						1				
Denver, Colo.	Oct. 19.	96,000	51						9	1	3		
New Haven, Conn.	Oct. 20.	82,000	15						1				
Toledo, Ohio.	Oct. 19.	80,000	22						1		1		
Nashville, Tenn.	Oct. 20.	65,153	15						1				
Fall River, Mass.	Oct. 20.	65,000	15						1	1			
Evansville, Ind.	Oct. 20.	53,000	30								1		
Savannah, Ga.	Oct. 9.	52,827	12										1
Lynn, Mass.	Oct. 20.	50,000	13								3		
Manchester, N. H.	Oct. 13.	41,000	15										
Galveston, Tex.	Oct. 12.	40,000	12						1				
Mobile, Ala.	Oct. 20.	40,000	14										
Portland, Me.	Oct. 20.	40,000	10						1				
Wheeling, W. Va.	Oct. 20.	35,000	14								1		
East Saginaw, Mich.	Oct. 20.	33,000	6									2	
Burlington, Iowa.	Oct. 17.	30,166	4										
New Albany, Ind.	Oct. 20.	30,000	9						2				
Altoona, Pa.	Oct. 13.	29,546	17						1	1	1		
New Bedford, Mass.	Oct. 20.	26,845	8										
Auburn, N. Y.	Oct. 20.	26,000	10										
Haverhill, Mass.	Oct. 20.	25,000	6						1				
Jackson, Mich.	Oct. 20.	22,500	8										
Poughkeepsie, N. Y.	Oct. 19.	22,000	8										
Newton, Mass.	Oct. 13.	21,105	3						2		1		
Newton, Mass.	Oct. 20.	21,105	8										
Newport, R. I.	Oct. 11.	20,466	7										
Newport, R. I.	Oct. 19.	20,466	6										
Pensacola, Fla.	Oct. 20.	15,000											

By order of the Supervising Surgeon-General.

GEO. PURVIANCE,  
*Surgeon, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 44. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., November 2, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended November 2, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended October 13 corresponded to an annual rate of 18.2 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Derby, viz., 11.9, and the highest in Manchester, viz., 35.7 a thousand. Small-pox caused 1 death in Preston. Diphtheria caused 5 deaths in Manchester and 3 in Newcastle-upon-Tyne.

*London.*—One thousand five hundred and thirty-six deaths were registered during the week, including measles, 50; scarlet fever, 30; diphtheria, 26; whooping-cough, 18; enteric fever, 18; diarrhœa and dysentery, 43; simple cholera, 2. The deaths from all causes corresponded to an annual rate of 18.7 a thousand. In greater London 1,896 deaths were registered, corresponding to an annual rate of 17.9 a thousand of the population. In the "outer ring" the deaths included diarrhœa, 14; diphtheria, 8; scarlet fever, 6.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended October 6 in the 16 principal town districts of Ireland was 20.0 a thousand of the population. The lowest rate was recorded in Lurgan, viz., 5.1, and the highest in Armagh, viz., 25.8 a thousand. In Dublin 160 deaths were registered, including measles, 2; enteric fever, 3; scarlet fever, 2; diarrhœa, 13; whooping-cough, 7.

*Italy.*—The minister of the interior issued the following order under date of September 26, 1888:

[Translation.]

1888.—MARINE HEALTH ORDER, No. 11.

The minister of the interior, by virtue of the law of March 20, 1865, on public health, Supplement C, and the Ministerial instructions of December 26, 1871,

DECREES:

That from to-day on the sanitary treatment of vessels arriving in the ports of the kingdom with unclean bills of health owing to yellow fever is established as follows:

ARTICLE 1. Vessels recognized to be in good healthy condition will be admitted to free pratique after a medical visit, if it appears from the explicit declaration of the ship's surgeon—

(a) That aboard the same there have not been laden soiled effects for personal or domestic use, or at least that such effects were taken aboard after being washed or disinfected in a suitable manner.

(b) That during the voyage there has been neither a verified case nor a suspected case of yellow fever.

ARTICLE 2. Those vessels which are not found in the conditions indicated in Article 1 will be admitted to free pratique after a rigorous medical visit and a regular disinfection of the soiled personal and domestic effects; always provided that it appears from the declaration of the ship's surgeon, or in the absence of such officer, of the captain, that during the voyage there has been verified no case of the above-named disease.

ARTICLE 3. Those vessels furnished with a ship's surgeon, which, although having had cases of yellow fever during the voyage, remained free from it for at least 12 days after the complete cure or death of the effected persons, will be admitted to free pratique under the precautions indicated in the preceding article. In such case, however, a physician's certificate will be necessary, from which it must appear that the most rigorous disinfections have been made of the effects belonging to the diseased (*malati*), and of the places in which they were treated.

ARTICLE 4. Those vessels which, after having had cases of yellow fever aboard, arrive in a port of the kingdom, and are not found in the conditions indicated in the preceding article, will be sent to the maritime sanitary station, which, case by case, shall be designated by this ministry.

Those vessels may also proceed direct to the Asinara Station (Asinara Lazzaretto) before mooring in any Italian port, in order there to submit to the practices which this ministry may command.

ARTICLE 5. It will be in all cases forbidden to any vessel whatsoever, coming from regions infected with yellow fever, to discharge ballast, if of earth or of sand; such shall be made on the open sea at the distance of at least 5 kilometers from the shore.

ARTICLE 6. With the present order the preceding ordinance of May 29, 1878, No. 9, shall be understood to be revoked in all its parts.

*Bordeaux, France.*—Five hundred and twenty-two deaths were registered during the month of September, 1888, including enteric fever, 12; scarlet fever, 4; diphtheria and croup, 11.

*Maceio, Brazil.*—Eight cases and 2 deaths from small-pox were reported during the month of September, 1888.

*Havana.*—Seven deaths from yellow fever are reported for the week ended October 19, 1888.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles, Whooping-cough.
Barmen.....	Oct. 13....	109,000	27								
Leghorn.....	Oct. 14....	101,854	34								
Mayence.....	Oct. 6....	65,802	37						1		
Cadiz.....	Oct. 13....	65,028	40								
Vera Cruz.....	Oct. 18....	23,800	20		1						
Gibraltar.....	Oct. 1....	23,631	10								
Kingston, Canada.....	Oct. 26....	17,300	1								
Cape Haytien.....	Oct. 13....	15,000	7								
Saint Thomas, W. I.....	Oct. 12....	15,000	4								
Laguayra.....	Oct. 13....	7,428									
Paris.....	Oct. 13....	2,260,945	986		1			7	10	24	5 2
Glasgow.....	Oct. 13....	545,678	220					2	3	6	
Warsaw.....	Oct. 6....	444,814	266				7		21	8	
Amsterdam.....	Oct. 13....	389,916	154				1	2			
Munich.....	Sept. 29....	275,000	140						3	1	
Palermo.....	Oct. 13....	250,000	78		1					1	
Genoa.....	Oct. 13....	179,780	90		1	11			1	1	
Trieste.....	Oct. 6....	154,500	62		7					3	
Toronto.....	Oct. 20....	130,000	28					1		2	
Stuttgart.....	Oct. 13....	125,510	37						1	2	
Bremen.....	Oct. 6....	122,000	34							1	
Havre.....	Oct. 6....	112,074	108		1			11		4	
Pernambuca.....	Oct. 9....	110,000	79				2	1			

## UNITED STATES.

*Palmetto, Fla.*—The following has been received under date of October 20, 1888:

I sent telegram reporting situation for week ending October 14, since which time to the present, 9 p. m., 20th, there have developed only 3 new cases in Palmetto and 1 new case in Manatee.

There are about four families, living in the outskirts of the town, who have not been much exposed. I have had board of health to quarantine these, and if we can prevent these from getting fever I don't expect more than 6 or 8 more cases. Last death on 9th.

The people here, as a rule, are poor. They depend chiefly for a living on the vegetables which they ship to northern markets. On account of the fever they will not be able to raise vegetables this winter; have been unable yet, in consequence of quarantine, to prepare for it.



Five dollars which Dr. Murray sent to help the needy is every cent of help Palmetto has received from the charitable. They can boil their bedding (quilts and blankets, &c.), but I think it would be safer to destroy their mattresses. Should they be destroyed, however, nine-tenths of the people could not replace them, and they argue that they have all had the fever and are not willing to destroy their property unless they were able to replace it, to prevent the possibility of some one else getting the fever. Our county board of health is too poor to relieve us.

On 22d September I discharged two guards, McLean and Pickens, and have had one do the work formerly done by these two. This guard has been necessary, and will be so long as we have to keep up the quarantine.

Very respectfully,

M. B. HARRISON.

The following inspection reports have been received from Sanitary Inspector Hartigan :

OCTOBER 21, 1888.

Sanford, Orange County, Fla., is situated on the south shore of Lake Monroe, at the head of navigation for large steamers on the St. John's River. It is a business center and distributing point, its streets are broad and regular, the soil is a sandy loam. In addition to the water facilities, five railroads enter the city, placing it in rapid communication with every section of the country. The town is on a broad plain rising from the lake evenly and reaching an elevation of forty feet in less than a mile, thus favoring thorough drainage. Immediately adjacent is the Sanford grant of 10,000 acres, embracing all kinds of land. Since the yellow-fever scare many improvements have been inaugurated to put the city in a good sanitary condition. A late ordinance requires the removal of plank sidewalks. Except in the business streets, which are brick or asphalt, these will be replaced by shell from prehistoric mounds that are found along the water courses; it consists principally of periwinkles and snails and a liberal sprinkling of broken pottery.

There are twenty-five to thirty artesian wells now in use. The outlet from these is 15,000 to 80,000 gallons daily for each well, which is carried through seven or eight drains, emptying into the lake. These drains also carry off the excess of storm-water. Along the southern limits is a large trench which carries off the swamp-water and intercepts that which flows from more elevated places, thus preventing it from entering the town. These drains will soon be reinforced by wells which will be sunk along Sixth street, where there is a ridge, throwing the water northwards into the lake, and in a southerly direction will communicate with the larger ditch above referred to.

The climate of Florida is generally regarded as the most equable in the country, not being subject to either extremes of heat in summer or cold in winter. The nearness of the gulf stream causes the trade winds of the Atlantic to sweep over the land from east to west during the day, lapping moisture from its numerous lakes—the returning cool winds from the gulf gently blowing across the State by night,

Following are meteorological data for two years at Sanford, commencing July, 1885, and ending June, 1887, furnished me by Observer Hersey of the Signal Service :

	Mean temper- ature.	Highest tem- perature.	Lowest tem- perature.	Rainfall.
	Deg.	Deg.	Deg.	Inches.
1885—July .....	79.5	94.7	70.0	5.52
August.....	79.7	94.9	70.0	6.75
September.....	78.5	93.8	68.4	10.73
October.....	70.4	90.4	48.2	7.48
November.....	62.7	86.5	34.9	0.29
December.....	55.6	84.9	32.0	1.85
1886—January* .....	53.1	77.0	21.0	4.77
February.....	57.4	78.7	31.3	1.18
March.....	62.2	86.0	42.4	8.17
April.....	66.1	86.0	44.2	6.60
May.....	74.4	93.1	57.6	0.89
June.....	79.3	94.7	65.0	11.08
July.....	78.1	93.3	66.8	10.21
August.....	79.6	94.4	67.9	4.12
September.....	79.3	92.4	65.5	5.01
October.....	72.6	85.8	56.0	8.75
November.....	63.9	82.2	42.4	0.79
December.....	57.9	78.0	33.3	3.20
1887—January.....	55.9	79.9	31.7	1.32
February.....	67.9	84.7	44.1	1.10
March.....	62.3	82.7	39.4	2.22
April.....	69.5	89.8	44.0	3.19
May.....	73.9	90.7	54.3	3.22
June.....	77.6	94.8	64.4	6.12

Yearly average temperature, 1885-6, 68.24°; 1886-7, 69.87°. Rainfall, 1885-6, 65.31 inches; 1886-7, 49.25 inches. Trade winds from N. E. and S. E. were the prevailing winds.

\*Month of severe frost, which was considered unexampled, and destroyed the fruit crops in nearly every section of the State. Only the younger orange trees, however, suffered to any great extent, as the present year's crop is larger than any former one.

Sanford is supplied with water from a lake 3 miles south of the town. It flows by gravitation through a main 2½ miles to the reservoir, which holds 200,000 gallons. From the reservoir it is forced into the pipes by the Holly system of water-works. It is thought by Doctors Wyly and Montgomery that its purity is affected by the storm water draining into it. Another possible source of contamination in the future, they claim, is the proximity of the cemetery, which is one-fourth of a mile distant and situated on an elevation. Property-owners throughout the city are gradually introducing more artesian wells. Cistern water is used to a limited extent. There are no surface wells.

Night-soil is carted 2 miles southeast of town, and converted into a fertilizer. It is mixed in 20 per cent. of plaster and 6 per cent. sulphate of potash, dried cow-chips being used as an absorbent. All the privies are furnished with duplicate zinc buckets, and regularly changed. They contain both fluids and solids, and in this way are removed to the pondrette establishment. Garbage is hauled westward 1½ miles from limits of town, where it is dumped and burned.

Burial permits are required. There were eight deaths between April and October, 1888, only one being from zymotic causes.

Mayor, H. L. Lillienthall; city physician, Dr. J. S. Montgomery; population, 3,500, about one-fourth of whom are colored.

An epidemic of dengue prevailed in Sanford in 1883, but there were no deaths. According to Dr. King Wyly, a leading practitioner there, the disease was ushered in abruptly by a chill, usually at night, followed by fever. This was at its height in 6 hours, and subsided generally in from 18 to 20 hours. The highest temperature noted was 105°; during remission it would fall to 100° and 101°, with subsidence of pain, nausea, and the other violent symptoms. Then apparently another attack similar to the first, and occasionally a third attack would take place. The violence of the attacks seemed to be manifested every other day. Tongue was furred, with other indications of torpid liver. Quinine generally controlled the disease. Convalescence was slow. Eruption in majority of cases, and desquamation only in the worst forms was seen. It is the opinion of the doctor and other observing physicians that as a rule dengue follows yellow fever the next year, even in districts where there has been no yellow fever. In 1882 Pensacola had yellow fever; dengue developed there in 1883, and swept over the entire State. So with Savannah in 1876 and 1877. In Tampa there is dengue this year. So surely contagious is it, that a man coming where it prevails, from the country, is sure to catch it and carry it wherever he goes. One illustration given was that of a whole circus company being seized with dengue in Macon in 1877 after performing at Savannah.

Yellow fever was introduced into Sanford on the 8th October last year by a colored family who came from Tampa with their bedding. The first person who had it outside of this family was a young white man for whom they did laundry-work. This young man's nurse in turn contracted the disease; and so it spread, until there were 150 cases in all and 8 deaths.

Respectfully submitted,

J. F. HARTIGAN.

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OCTOBER 22, 1888.

Orlando, the capital of Orange County, is 200 feet above the sea, and lies 120 miles south of Jacksonville. It has a metropolitan look. The population is 5,500, about one-third being colored.

Probably there is no town in the State whose development has been more rapid, or whose growing tendency and permanency is more secure. It is beautifully situated in the heart of a productive country, with ample railroad facilities, and has a most enterprising population. Orlando has another attraction. Within the city limits and vicinity there are sixteen to twenty spring-water lakes, some of them quite large. From one of the purest of these her water supply is obtained, which, according to analysis, is not excelled anywhere. The works are two miles northeast of city, and situated on an elevation a few hundred yards off is the standpipe. This is more than sufficient for all emergencies. A small portion of the population use surface wells.

The same system of zinc buckets are in use here that I found at Sanford. The matter is carted out in them a considerable distance beyond the suburbs, and there made into a fertilizer. It is mixed with dried

muck, which is indigenous to the place, and then screened. It makes a very rich soil, has no offensive odor, and is in active demand.

This method of disposing of night soil, in a place like Orlando, is perhaps as good as any that can be devised—in my opinion—as it is impracticable for any town to empty sewerage into any body of water, unless it be running or tidal water, otherwise the matter would be continually accumulating where deposited, and in time become a nuisance and source of danger to the health of the community.

The cemetery is on an elevation two miles southeast of center of town. No burial permits are required, but soon will be. There were 28 deaths from May 1 to October 1, 1887, 4 being zymotic diseases. From May 1 to October 1, 1888, 27 deaths; 10 zymotic. No case of yellow fever has ever been known in Orlando.

Mayor, Dr. F. S. Chapman; city physician, Dr. R. N. Dickenson.

Respectfully submitted,

J. F. HARTIGAN.

OCTOBER 24, 1888.

Bartow, the county seat of Polk county, is the southern terminus of the Bartow branch of the Southern Florida Railroad, and of the Pemberton Ferry branch of the same road; it is also the northern terminus of the Charlotte Harbor division of the Florida Southern Railway. The town is two miles square; it was incorporated in 1884; its elevation is about 100 feet, and its soil is a dark spongy loam. Population, 2,500; about one-fourth colored. Farming is the principal industry. Rich pine, live-oak, and hammock growths surround it everywhere.

The location of Bartow is most favorable for drainage. It is on a broad, flat hump, sloping north, east, and west, into a run which extends to Peace River. After the heaviest rain the water does not stand an hour.

Water is obtained principally from wells, averaging 35 feet deep. In sinking them, in every case, five or six feet of rock have to be drilled through, showing the whole town to be on a bed of rock, similar to that found on the coast; the rock is generally 30 feet below the surface. This fact affords immunity from contamination, and is the reason there are no such evil results here as are seen from wells elsewhere. After the rock is drilled a pump is sunk. There are some open wells, averaging 25 to 30 feet, from which water is obtained on the surface of the rock; this is far inferior to that below the rock. About 10 per cent. of the population use cistern water.

The same system of buckets is used here as at Sanford and Orlando. The soil, after disinfection with lime and copperas, is carted two miles from town to a dumping-ground in a low place near Peace River, which empties into Charlotte Harbor and the Gulf.

Mayor, Dr. J. P. Statham; secretary board of health, Dr. F. M. Wilson. No burial permits are issued. The cemetery is two-thirds of a mile from centre of town.

Dr. Wilson states that during five year's practice there have not been more than ten cases of typhoid fever, and none of dengue.

Respectfully submitted,

J. F. HARTIGAN.



OCTOBER 23, 1888.

Kissimmee, the county seat of Osceola County, is situated at the head of Lake Tohopekaliga, on the South Florida Railroad. It is 54 feet above the sea, and has a population of 2,000. The town only dates from 1883, when the Okeechobee Drainage Company, who had a contract with the State, commenced the gigantic undertaking of reclaiming 5,000,000 acres of land. Canals were cut communicating with the chain of lakes and Kissimmee River, leading down 75 miles to Lake Okeechobee and the Gulf. One of the results of these operations is the establishment of a mammoth sugar mill, and plantations 6 miles from the town on the richest kind of muck soil. Thousands of acres of newly drained lands in the vicinity are now being utilized, where steamboats floated only three years before. The sugar industry therefore of South Florida bids fair to rival the orange.

Cistern water is principally used, although water from the lake is being gradually introduced. There are some few surface wells.

Open air privies are in use almost exclusively, and most of the matter is systematically disinfected and removed a mile outside, where it is burned with sweepings from the town. A large proportion however is buried in the yards.

Ditches are dug for drainage which flows towards the east and empty into the lake. About the centre of town is a ridge running north and south, and sloping east and west, emptying into the lake in the east, and in the west the storm water is carried off from a valley along a circuitous route into the lake a mile south of the town.

No burial permits are issued, but an ordinance has just been passed requiring them. The present cemetery is half a mile from centre of town. It has been ordered to be abandoned and removed  $1\frac{1}{2}$  miles north. There were not more than 6 deaths from May 1st to October 1st, 1888.

Mayor, J. W. Aderhold; health officer, Dr. S. G. Worley. Doctor Worley says he has seen no typical cases of malarial or typhoid fever. "Dengue," however, prevailed to a certain extent; it simulates typhoid, but is amenable to antiseptic treatment, such as salol, creosote, and bichloride of mercury. It attacks all ages. Some deaths have occurred, perhaps two per cent. But the disease has practically subsided since the surface wells have been in a measure abandoned. The deaths that have taken place, he thinks, seem to have been due to septic poisoning, inasmuch as suppuration of the parotid glands have occurred in some instances.

When the doctor first came here six years ago he treated it for typhoid, but the result was unsatisfactory. He therefore thought of the septic theory, from its clinical course. Unlike typhoid fever, there was a tendency to remit from time to time; besides the highest temperature was in the morning. It also lacked the usual incubative period of that disease. Quinine seemed to intensify the nervous symptoms, which predominated in every case. He observed no eruption or desquamation.

The disease commenced abruptly, accompanied by gastric irritation and vomiting, temperature some times reaching  $106^{\circ}$ . It only assumed the form of typhoid or continued fever after the third or fourth day, then prostration and low muttering delirium; in some instances sudamina, rose-colored spots, hæmaturia, &c. He claims that he has uni-



formly aborted the disease since he adopted the salol treatment. He had only seen it among those who had used surface water. In every instance it was traceable to these wells. It is known by various names, as physicians thought fit to call it, such as typho-malarial dengue, relapsing fever, &c. It is a disease of South Florida, and in his opinion is a hybrid form of typhoid, modified by the peculiar conditions of the climate, and quite amenable to salol and like antiseptic measures.

Respectfully submitted,

J. F. HARTIGAN.

OCTOBER 22, 1888.

Titusville, the county seat of Brevard County, is situated on the west bank of Indian River, 12 miles from its head, 18 miles from the ocean. It was incorporated in 1886; soil a sandy loam. A branch of the Jacksonville, Tampa, and Key West Railroad enters the place from Enterprise Junction, over which road visitors come to pass the winter along the banks of the river down to Lake Worth, 180 miles distant.

Following is Titusville meteorological register for the past year:

	Mean temperature.	Highest temperature.	Lowest temperature.	Rainfall.
	Deg.	Deg.	Deg.	Inches.
1887—July .....	80.5	98.8	67.9	7.82
August .....	80.8	94.4	69.4	2.47
September .....	77.8	91.7	64.0	6.32
October .....	74.8	87.0	44.8	12.17
November .....	65.4	81.9	32.5	0.88
December .....	63.2	81.0	40.2	1.91
1888—January .....	62.5	80.5	36.5	0.74
February .....	63.7	81.0	37.9	7.11
March .....	63.4	87.0	41.0	2.16
April .....	71.6	86.8	56.0	2.59
May .....	75.3	88.0	62.0	2.92
June .....	78.7	93.1	60.1	6.56

Yearly average temperature, 71.47°; rainfall, 53.65 inches; prevailing winds, S. E.

A ridge runs through the town north and south, 16 feet above the river, gradually sloping on the east to the river and west to a little communicating stream. Four main ditches carry off the rainfall.

Water, so far, is obtained principally from driven wells, averaging 20 feet deep. It is considered wholesome. Several cisterns are also in use. About six weeks ago an artesian well was begun. At about 130 feet, water, strongly impregnated with salts and sulphur, began to flow. At the present time 700 feet have been reached without any perceptible change in it. Already nearly 600 feet of rock has been drilled, and the contractor thinks when he penetrates this he will find a vein of fresh water. At Smyrna, 40 miles north, and Daytona, 55 miles, also south at Rock Ledge, 20 miles, a pure water is obtained at only 150 feet deep.

Night-soil is carted off 2 miles beyond the town, and, after disinfection, is used for agricultural purposes. Garbage is gathered together as far as practicable and burned. It is intended to improve the drainage and sewage system the ensuing winter.

No burial permits are issued. There were five deaths from April to October, 1888, one being from typho-malarial fever, contracted away from his home.

The cemetery is situated 3 miles from town, about 18 feet above water-level.

Mayor, George B. Rumph; physician and member county board of health, Dr. B. R. Wilson; population, 1,200; one-third colored.

Respectfully submitted,

J. F. HARTIGAN.

TAMPA, FLA., *October 27, 1888.*

In compliance with Dr. M. B. Harrison's request I forward the letters herewith inclosed.

Doctor Pelot denied the existence of yellow fever at Manatee last fall and this summer. Like many other physicians in the State, he either does not know yellow fever when he sees it or else will not admit it on account of popular pressure. I am thoroughly satisfied that unless you remain in charge of the State and keep up a course of investigation during the winter there is great probability of the fever hibernating again at Manatee and other points.

You have experienced for yourself how senseless the people and press of Florida can be when the truth conflicts with local interest of any community. I am determined after this season to have nothing to do with public health matters, unless paid a liberal salary, and have so written to the Governor. I will no longer hold any office whose emolument is abuse.

Unless the Governor calls an extra session of the Legislature this body will not convene till in April, when the season for eradicating the disease will have passed, hence the importance of your remaining in charge. Though more than I, do not see how you can accomplish much without the cordial support of these internal county boards of health.

Four new cases in the last two days. No deaths since last report.

Very respectfully,

JOHN P. WALL.

PALMETTO, FLA., *October 24, 1888.*

I am placed in an awkward position, and deem it my duty to write you for advice and instructions.

You have been informed that Doctor Pelot, a local physician at Manatee village, has denied the existence of yellow fever on the Manatee River, while, in the opinion of Doctors Wall, Murray (United States Marine-Hospital Surgeon), and others, we have had it here, at least since last July. Doctor Murray was ordered off from here about September 1st, leaving me in charge as inspector, telling me to look after the yellow fever on the river, and make weekly reports by telegraph to you until you ordered me to discontinue them.

I understood that it was my duty to see all "suspicious cases" here, and whenever and wherever I found a case of yellow fever on Manatee River, to report it.

I have done so up to the present time. Last week I was sent for to see a case at Manatee. When I got there I found it a well-marked case

of yellow fever, in my judgment; that Doctor Pelot was attending the case, and, while I did not see Doctor Pelot, I understand he pronounces it a case of "dengue." Through one of the members of the Board of Health, I learned to-day that another member of the same family took fever yesterday, and that he saw a case of Doctor Pelot's yesterday, at Braidentown, which, in his judgment (and he is an intelligent man, of a large family, and all his children have just had yellow fever), it was a well-marked case of yellow fever. I intended visiting these cases to-day, but the President of our Board of Health, a brother-in-law of Doctor Pelot, made such remarks as to deter me. Such as "Doctor Pelot was an eminent man and physician, who had been and was respected; that he had the confidence of at least many people; and that while Doctor Murray, a surgeon, might be sent by the Government to inspect suspicious cases, he, Doctor Murray, could not delegate that authority to another; that Doctor Pelot did not like any other physician, who had no authority do so, to visit his patients without an invitation from him, or at least having his consent to do so, &c." Such was about the substance of what he said.

Now then, I am quite well convinced that some one is opposed to having me find yellow fever on the south side of the river, either at Manatee or Braidentown; and I fully believe, from information, that there is at least one case in each of those places; but until, or unless clothed with authority from you, I can have nothing more to do with Doctor Pelot's cases.

Very respectfully, &c.,

M. B. HARRISON.

OCTOBER 26, 1888.

Fort Meade, Polk County, incorporated June, 1885, is situated 10 miles south of Bartow, on the Florida Southern Railway. It is embowered in orange groves and in the heart of a rich pine and hummock country. The population is 800, 10 per cent. being colored.

Here also, as at Bartow and other Florida towns, a ridge runs north and south, adapted by nature for the important purpose of drainage; in the east it slopes to Peace River, and westerly to a run which communicates along a circuitous route with the river.

About one-half of the population use cistern water. The other half is obtained from wells which are sunk about twenty feet through a clay bed, then bricked and cemented to keep out the surface water. In some cases the wells are curbed from the bottom with pine boards. The country is well supplied with fresh water springs.

A mild form of remittent or bilious fever prevails, which is easily managed. Typhoid is rare and only seen in the country. Dr. Weems attributes its cause to drinking rotten limestone water.

Open-air privies are the rule, but there is no ordinance requiring methodical removal. An inspector, however, requires the people to use dry earth and lime, and in most cases it is then converted into a fertilizer.

The cemetery is within the corporate limits. No burial permits.

Mayor, William Thompson; member county board of health, Dr. W. L. Weems.

Respectfully submitted,

J. F. HARTIGAN.

OCTOBER 26, 1888.

Arcadia, De Soto County, is 50 miles south of Bartow, on the Florida Southern Railway, and has a population of 250.

Mayor and physician—Dr. Edward Greene.

Five or six stores on the line of railroad constitute the business portion. On an oak ridge a few hundred yards west, across a branch, 30 or 40 houses are scattered.

The water supply is from surface wells. There is no system of disposal of the contents of privies, which are generally above ground.

With the exception of ridge above mentioned, the vicinity is low and flat, and in some places swampy. Remittent and intermittent fevers are the prevailing diseases. Cattle raising, principal industry.

Respectfully,

J. F. HARTIGAN.

OCTOBER 26, 1888.

Fort Ogden, De Soto County, is 10 miles south of Arcadia, on same line of railway. Population, including surrounding country, about 350.

Mayor, I. O. Carr; physician, Dr. O. E. Rush.

This place is higher than Arcadia, and in addition to the cattle industry, orange culture is considerable.

The water supply is from wells. There is no systematic disposition of night soil.

Respectfully,

J. F. HARTIGAN.

DEPARTMENT OF HEALTH,  
*Brooklyn, N. Y. No date.*

DEAR SIR: John Jellard, captain Steamship Ceareuse, Red Cross Line, from Pernambuco and Para, died in this city yesterday, 9 p. m., of yellow fever.

Vessel arrived at quarantine October 22d, city same day. Captain taken sick and in bed Friday the 19th.

Vessel ordered out of city's jurisdiction.

Respectfully, yours,

R. C. BAKER, M. D.

J. B. HAMILTON,  
*Supervising Surgeon-General.*

TAMPA, FLA., October 24, 1888.

DEAR SIR: For the week ending to-day there have been only 2 cases of yellow fever reported, and 1 death on the night of the 22d inst. This patient had no physician, and I was called to see her an hour or so before she died. I have heard of a few other cases of fever—probably as many as 4 or 5—which were probably cases of the fever.

If new material can be kept out of here, the fever must soon cease. For the past week the weather has been very warm for the season.

The recent death makes a total of 6 for the season, so far since the 7th of August.

Very respectfully,

JOHN P. WALL, M. D.,  
*President Board of Health.*

Surg. Gen. J. B. HAMILTON,  
*Washington, D. C.*

SURGEON'S OFFICE,  
*Fortress Monroe, Va., October 29, 1888.*

SIR: I have the honor to report that seaman Tore Sanchez, of the Spanish Steamship "Bunaventara," died in hospital on Fisherman's Island, on the 27th instant, of yellow fever. The ship will be thoroughly cleansed and disinfected before her release from quarantine. No other cases have occurred.

Very respectfully,

L. L. WILLIAMS,  
*P. A. Surgeon, M. H. S.*

The SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
*Washington, D. C.*

*Gainesville, Fla.*—Dr. Martin telegraphs as follows :

October 26: "One death, D. D. Sillghman (white)."

October 26: "One new case (colored); 2 cases under treatment."

October 27: "One new case (colored)."

*Enterprise, Fla.*—Dr. Posey telegraphs as follows :

October 29: "Seventeen cases on hand; 2 deaths in last 48 hours; area of infection extending into country."

November 1: "One new case to-day; no deaths. Census being taken shows large idle colored population, and unless epidemic subsides shortly will have to be fed."

*Palmetto, Fla.*—M. B. Harrison telegraphs as follows :

October 30: "For week ending 6 p. m., Monday, October 29, there were at Palmetto Fla., new cases of yellow fever, 3; deaths, 1. Total number cases to date, 82; total number deaths to date, 8."

*Live Oak, Fla.*—Passed Assistant Surgeon Urquhart telegraphs as follows :

October 28: "Dr. Hankins reports a case of yellow fever at this place. He desires an expert to investigate it. I have had the house quarantined."

October 30: "No mail is put off here. Cars will have to be moved. There are two more people ailing here."

November 1: "Doctor Hankins reports 4 cases here. Will go with (fumigating) cars immediately to Dupont. The F. R. and N. train is ordered not to stop here. No passengers from infected points to-day."

Mayor Carroll telegraphs November 1: "Can you send a yellow-fever expert here immediately?"

*Camp Perry, Fla.*—Surgeon W. H. H. Hutton telegraphs as follows:

October 25: "Morning report. Present: Officers, 5; guards, 11; employés, 35; refugees arrived, 9; discharged, 6; remaining, 134. Fever camp, 4."



October 26: "Morning report. Present: Officers, 5; guards, 11; employés, 35; refugees arrived, 26; discharged, 8; remaining, 152. Fever camp, 4—all convalescent."

October 26: "Doctor Posey reports 12 cases and 2 deaths at Enterprise; also great destitution. Wants nurses and supplies. Will instruct him to apply to Dr. Porter for supplies."

October 27: "Mr. Upton, of Uptonville, 12 miles north, returned there from Baldwin Monday; Tuesday reported sick. Sent Guiteras and Posey, who reported case suspicious. Brought Upton to camp yesterday; to-day brought a second case to camp. Have prohibited passenger-trains stopping there. Fumigated Upton's premises, and will keep close watch on the place."

October 27: "Morning report. Present: Officers, 5; guards, 11; employés, 38; refugees arrived, 28; discharged, 17; remaining, 163. Fever camp, 5."

October 28: "Morning report. Present: Officers, 5; guards, 11; employés, 38; refugees arrived, 36; discharged 14; remaining, 185. Fever camp, 5—last 2 cases brought from Uptonville."

October 29: "Morning report. Present: Officers, 5; guards, 11; employés, 38; refugees arrived, 3; discharged, 26; remaining, 162. Fever camp, 5."

October 30: "Morning report. Present: Officers, 4; guards, 11; employés, 38; refugees arrived, 5; discharged, 20; remaining, 147. Fever camp, 4. Doctor Guiteras examined every man, woman, and child, and every house and room in Baldwin, and did not find a case of sickness of any kind. Place perfectly healthy."

October 31: "Morning report. Present: Officers, 4; guards, 11; employés, 39; refugees arrived, 6; discharged, 30; remaining, 123. Fever camp, 5."

November 2: "Morning report. Present: Officers, 4; guards, 11; employés, 40; refugees arrived, 3; discharged, 11; died, 1; remaining, 124."

*Jacksonville, Fla.*—Dr. J. Y. Porter telegraphs as follows:

October 25.—"New cases, 71; deaths, 2; total cases, 3,974; deaths, 339. Patients, St. Luke's, 10; Sand Hills, 14."

October 25.—"President board of health at Enterprise wires this a. m. nine cases; six in critical condition; himself only physician up. Need fumigating material and everything for taking care of population of 500. I have wired that Posey would go."

October 26: "New cases, 23; deaths, 2; total cases, 3,997; deaths, 341. Patients, St. Luke's, 12; Sand Hills, 12."

October 27: "New cases, 46; deaths, 4; total cases, 4,043; deaths, 345. Patients, St. Luke's, 10; Sand Hills, 13."

October 28: "New cases, 16; deaths, 3; total cases, 4,059; deaths, 348. Patients, St. Luke's, 10; Sand Hills, 12."

October 29: "New cases to-day, 36; deaths, 4; total cases reported, 4,095; deaths, 352. Patients, St. Luke's, 11; Sand Hills, 9."

October 30: "New cases, 32; deaths, 1; total cases, 4,127; deaths, 353. Patients, St. Luke's, 7; Sand Hills, 6."

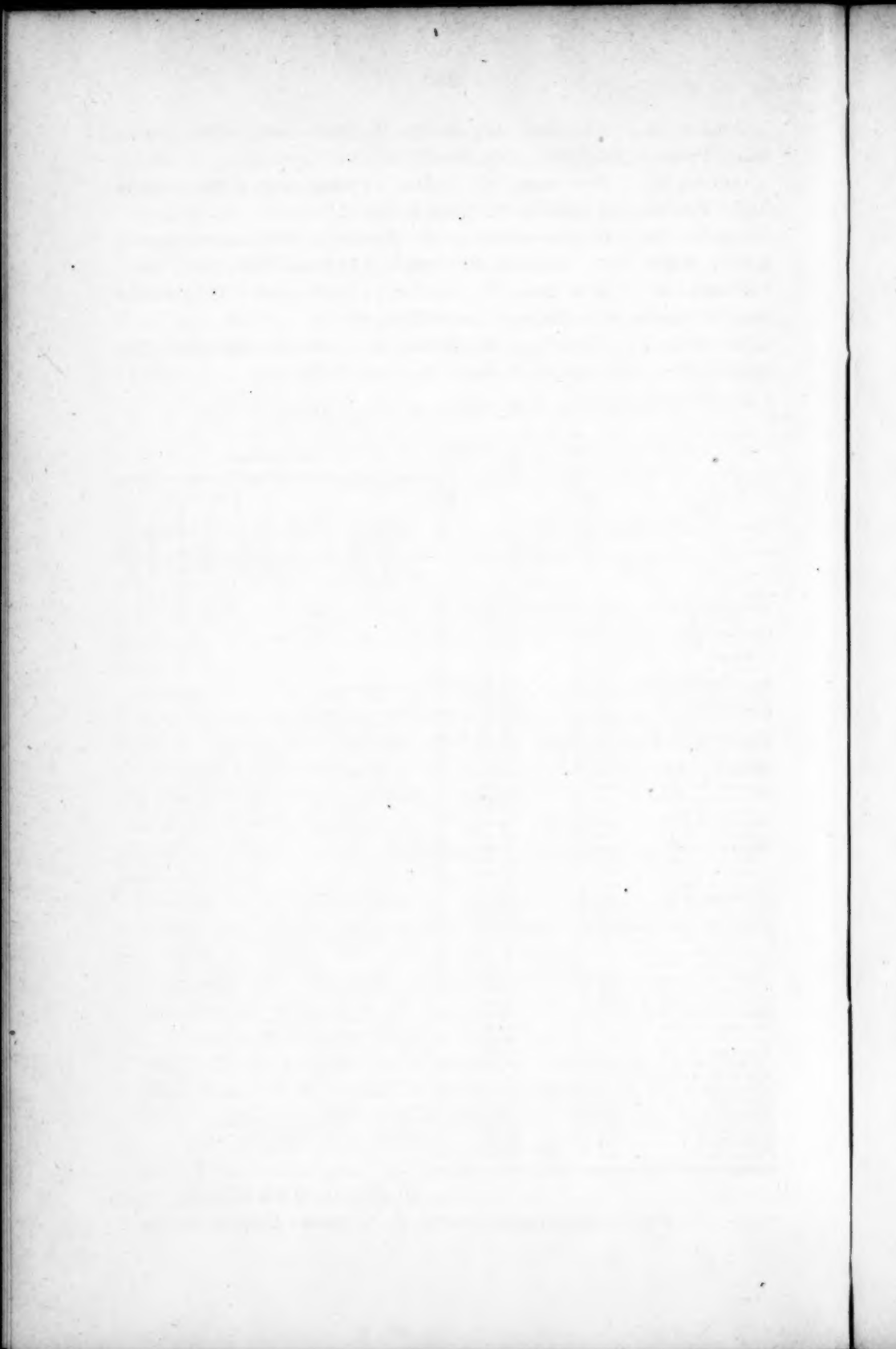
November 1: "New cases, 56; deaths, 2; total cases reported, 4,210; deaths, 356. Patients, St. Luke's, 11; Sand Hills, 4."

# MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Oct. 27	1,539,908	673						13	16	23	6	14
Philadelphia, Pa.	Oct. 20	1,016,758	337						2	4		2	3
Brooklyn, N. Y.	Oct. 27	865,855	296		1				12	4	20		5
Chicago, Ill.	Oct. 27	800,000	277										
St. Louis, Mo.	Oct. 20	440,000	169						6	1	14		2
Baltimore, Md.	Oct. 27	431,879	157						8	1	13	1	1
Boston, Mass.	Oct. 27	415,000	195						2				
San Francisco, Cal.	Oct. 19	300,000	100						3		5		
Cincinnati, Ohio.	Oct. 27	255,139	98										
New Orleans, La.	Oct. 20	248,000	121										1
Pittsburgh, Pa.	Oct. 20	230,000	73						11		5		
Washington, D. C.	Oct. 20	225,000	106						9		2		3
Washington, D. C.	Oct. 27	225,000	92						11		2		2
Louisville, Ky.	Oct. 27	200,000	60						9		2		
Milwaukee, Wis.	Oct. 27	195,000	66						3	3	1	2	
Kansas City, Mo.	Oct. 27	180,000	40						5		2		
Minneapolis, Minn.	Oct. 20	180,000	59						7		6		
St. Paul, Minn.	Oct. 20	175,000	49						8		4		
Newark, N. J.	Oct. 23	174,954	82						3	1	10		
Rochester, N. Y.	Oct. 27	120,000	32						1		4		
Denver, Colo.	Oct. 26	96,000	32						8				
Columbus, Ohio.	Oct. 27	93,000	25								1		
Toledo, Ohio.	Oct. 19	80,000	17										
Nashville, Tenn.	Oct. 27	65,153	27						1				1
Fall River, Mass.	Oct. 27	65,000	22						2	1		1	
Charleston, S. C.	Oct. 20	60,145	43										
Evansville, Ind.	Oct. 27	53,000	12						1		1		
Savannah, Ga.	Oct. 26	52,827	23										
Lynn, Mass.	Oct. 13	50,000	13						1	1			
Manchester, N. H.	Oct. 20	41,000	14								4		
Mobile, Ala.	Oct. 27	40,000	12										
Portland, Me.	Oct. 27	40,000	13								2		
Wheeling, W. Va.	Oct. 20	35,000											
East Saginaw, Mich.	Oct. 27	33,000	8								1		
Davenport, Iowa.	Oct. 20	30,084									1		
New Albany, Ind.	Oct. 27	30,000	4						2	2			
Wheeling, W. Va.	Oct. 27	30,000	4										
Altoona, Pa.	Oct. 20	29,546	5										
New Bedford, Mass.	Oct. 27	26,845	14						1		2		
Auburn, N. Y.	Oct. 27	26,000	8							1			
Haverhill, Mass.	Oct. 27	25,009	11										
Jackson, Mich.	Oct. 20	22,500	6										
Poughkeepsie, N. Y.	Oct. 19	22,000	7								3		
Newport, R. I.	Oct. 25	20,466	10						2				
Pensacola, Fla.	Oct. 27	15,000	10						2				

JOHN B. HAMILTON,

Supervising Surgeon-General, U. S. Marine-Hospital Service.



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 45. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., November 9, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended November 9, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended October 20 corresponded to an annual rate of 21.0 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Leicester, viz., 16.0, and the highest in Blackburn, viz., 29.8 a thousand. Diphtheria caused 6 deaths in Manchester.

*London.*—One thousand six hundred and forty-one deaths were registered during the week, including measles, 80; scarlet fever, 33; diphtheria, 36; whooping-cough, 12; enteric fever, 19; diarrhœa and dysentery, 42. The deaths from all causes corresponded to an annual rate of 20.0 a thousand. In greater London 2,004 deaths were registered, corresponding to an annual rate of 18.9 a thousand of the population. In the "outer ring" the deaths included diarrhœa, 10; diphtheria, 8; measles, 5; whooping-cough, 5.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended October 20 in the 16 principal town districts of Ireland was 23.3 a thousand of the population. The lowest rate was recorded in Lurgan, viz., 5.1, and the highest in Limerick, viz., 32.4 a thousand. In Dublin 164 deaths were registered, including measles, 1; scarlet fever, 1; diarrhœa, 5; whooping-cough, 6; diphtheria, 1; enteric fever, 6; typhus, 1; and dysentery, 2.

*Scotland.*—The deaths registered in 8 principal towns during the week ended October 20 corresponded to an annual rate of 20.4 a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Leith, viz., 12.6, and the highest in Paisley, viz., 43.8 a thousand. The aggregate number of deaths registered from all causes was 517, including measles, 24; scarlet fever, 10; diphtheria, 8; whooping-cough, 16; fever, 7; and diarrhœa, 27.

*Gibraltar.*—The secretary of the board of health reports under date of October 13, as follows :

At a meeting of the board of health this day, it was decided that vessels arriving at this port, with pilgrims on board, should be refused admission to pratique.

*Catania, Italy.*—Three hundred and seventy-five deaths are reported for the month of August, 1888, including small-pox, 120, and enteric fever, 17.

*Martinique.*—The United States consul in his dispatch dated October 17, 1888, states "that in the fortnight preceding this date there have been 11 cases of small-pox, and 4 deaths from the same disease.

"Some sporadic cases of yellow fever have manifested themselves here, but I can not give reliable particulars as the Government seems reluctant to furnish any information on the subject."

In a dispatch of same date the consul states that "in the *Moniteur* it is officially announced that a quarantine of twenty-three days, time of voyage included, has been imposed by Martinique against Florida."

*Callao.*—United States consular report for week ended October 6, states : "Measles still epidemic; mortality amongst children."

*Demerara.*—The United States consul in his report dated September 30, states that "there have been no infectious or contagious diseases reported within this consular district during the past month."

*San Juan, P. R.*—The United States consul reports as follows :

Week ended October 6, yellow fever 2 cases; week ended October 13, yellow fever 1 case; week ended October 19, yellow fever 1 case.

"At Ponce there has been a good deal of small-pox—not officially reported."

*Havana.*—Four hundred and sixty-eight deaths were registered during the month of October, 1888, including yellow fever, 48; enteric fever, 9; pernicious fever, 19.

Eighteen of the deaths from yellow fever occurred in the military hospital.

The sanitary inspector, Dr. D. M. Burgess, states that—

Two or three American vessels have had the misfortune, after entering the port and anchoring in the bay, to become surrounded by infected vessels, fresh in their pollution after discharging at infected wharves for many days, and have consequently been invaded by yellow fever. Conspicuously the ship "Portland Lloyds" and bark "Nereid."

Small-pox, which for over 15 months reigned here in an active epidemic form, seems to have nearly or quite disappeared for the present, from Havana, its suburbs, and the province of that name, as there has not been a death from it for the last 50 days or more; however, in some of the outlying towns, as Matanzas, Guines, and Manzanillo it still exists.

The weather still continues hot and no decided "norther" has refreshed us as yet this season.



MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Whooping-cough.
Glasgow .....	Oct. 20....	545,678	215	.....	.....	.....	.....	5	6	3	.....
Warsaw .....	Oct. 13....	444,814	259	.....	.....	8	.....	.....	15	10	.....
Calcutta .....	Sept. 15....	433,219	174	7	.....	12	.....	.....	.....	3	.....
Amsterdam .....	Oct. 20....	389,916	143	.....	.....	.....	.....	3	.....	3	.....
Rome .....	Sept. 1....	300,467	139	.....	.....	.....	.....	3	.....	1	.....
Rome .....	Sept. 8....	300,467	149	.....	.....	.....	.....	8	1	1	.....
Munich .....	Oct. 6....	275,000	168	.....	.....	.....	.....	.....	3	4	.....
Munich .....	Oct. 13....	275,000	154	.....	.....	.....	.....	1	3	4	.....
Belfast .....	Oct. 20....	227,022	97	.....	.....	2	.....	.....	.....	.....	.....
Bristol .....	Oct. 20....	226,510	82	.....	.....	.....	.....	1	1	.....	.....
Trieste .....	Oct. 13....	154,500	62	.....	.....	7	.....	.....	.....	3	.....
Toronto .....	Oct. 27....	130,000	28	.....	.....	.....	.....	.....	1	2	.....
Stuttgart .....	Oct. 20....	125,510	34	.....	.....	.....	.....	.....	1	1	.....
Bremen .....	Oct. 13....	122,000	40	.....	.....	.....	.....	.....	1	.....	1
Havre .....	Oct. 13....	112,074	80	.....	.....	2	14	.....	1	.....	.....
Mayence .....	Oct. 13....	65,802	27	.....	.....	.....	.....	.....	2	.....	.....
Curacao .....	Oct. 13....	25,000	5	.....	.....	.....	.....	.....	.....	.....	.....
Vera Cruz .....	Oct. 25....	23,800	24	.....	.....	2	.....	.....	.....	.....	.....
Gibraltar .....	Oct. 14....	23,631	13	.....	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

*San Francisco, Cal.*—The secretary of the board of health reports eight cases of small-pox for the week ended October 26, 1888. Six of these cases were discovered in the city and county hospital. The patients were immediately removed to the small-pox hospital, and the ward vacated and fumigated, and the inmates vaccinated.

*Tampa, Fla.*—Dr. J. P. Wall, president board of health, reported under date of October 31, 1888, as follows: "For the week ending to-day there have been about 12 new cases of the fever, generally of a mild type. Seven of these cases I have seen, and the other 5 I know of from hearsay, but have little doubt of their character. No deaths. The patient with the parotid abscess is recovering, though not able to leave bed yet, four weeks from beginning of illness.

"Plant City continues free from fever, though the cordon had better be continued for a while longer. No yellow fever in the county outside of Tampa."

*Uptonville, Ga.*—Surgeon W. H. H. Hutton reported under date of October 27 as follows:

I telegraphed you this morning relative to a case of fever at Uptonville, Ga. This place is 12 miles north on the S. F. & W. R. R.

On one of my trips from Waycross to Camp Perry, just previous to assuming charge, about September 5th or 6th, I found Mr. Upton on the train bound for Jacksonville, and ascertained that he had been into and out of Jacksonville several times.

I called the attention of the conductor that he was prohibited from bringing passengers from Jacksonville. The conductor said Upton had

a special pass. I told him to take Upton to Jacksonville, and if he allowed any more passengers on his train from Jacksonville I would report him; I then saw Upton, who said his business required him to go to Jacksonville; he cared nothing for yellow fever, &c., whereupon I told him to go on to Jacksonville, and if found on the road again he would be arrested. He said he would go out to Baldwin.

Nothing more was heard of him till the 24th, when, as I was on my way from Palatka to Camp, and by missing connection was obliged to go to Waycross and return, I heard that Upton was sick at Uptonville. That evening I sent Doctors Guiteras and Posey on the Government train to see him.

They found Upton had returned to Uptonville from Baldwin in a buggy on the 22d. He had no fever. Next morning they again visited him, and while he had no fever, he presented every indication of convalescence from yellow fever, and as a precaution against the spread of the disease brought him to Camp, where the diagnosis was confirmed. This morning Doctor Guiteras again went to Uptonville, and found Mr. Simmons, who lives about 60 feet from Mr. Upton, sick, and brought him to Camp also. Both Mr. Upton's and Simmons's houses have been fumigated; trains are not allowed to stop at that point, and every precaution will be taken to control the disease.

If any further developments take place I will depopulate the place and bring such as can not do otherwise to Camp; which we did with Callahan, which measures have so far aborted the disease at that point.

*Punta Gorda, Fla.*—Dr. J. F. Hartigan, Sanitary Inspector, reported under date of October 31, as follows:

Punta Gorda, De Soto County, the terminus of Florida Southern Railway, is 250 miles south of Jacksonville. It is situated on a projection of land at the junction of Charlotte Harbor Bay with Peace River, and was incorporated December 3, 1887. As laid out on the map, it is four miles square, the soil is a sandy loam, population, 200: Fishing main industry. The town gradually slopes from the bay, rising about 8 feet in a mile; where necessary ditching is resorted to for drainage.

There is no history of dengue or yellow fever; malarial fever is sometimes seen, but it is easily amenable to treatment. Ordinances exist against nuisances of all kinds, and although a small community, rigid quarantine has been maintained all summer.

The sentiment of the citizens of the place, on account of its exposed situation, is that a quarantine station be established at Boca Grande Pass, and at Punta Rossa; also that there should be a general patrol of the coast for the purpose of protecting them against the introduction of yellow fever, and to prevent smuggling. All boats coming up the bay, they suggest, should be quarantined the usual time, and be provided with a certificate of health from the proper officer. This would create a feeling of security, and tend to invite business and population at this desirable health resort, and important situation.

Cistern water is the principal supply. A small number of the inhabitants use surface wells. An artesian well with sulphur taste and odor, belongs to the hotel; its depth is about 400 feet. The sewer-pipe connected however, is not of the best construction, nor is it carried out sufficiently into the bay to insure against evil consequences.

The water-closets of the town are constructed generally as follows: Under the opening the closet is supplied with a tray lined with tin or

zinc raised from the ground, and having perforations for the urine to pass into the sand below; letting the urine escape in this way, it is claimed, renders the odor less unpleasant. According to an ordinance the solid matter is required to be removed outside the corporate limits every four days, and in a large measure it is converted into a fertilizer. There is no cemetery.

Mayor, W. H. Simmons; physician, Dr. W. H. Burland.

*Port Huron, Mich.*—Dr. Farnum telegraphs as follows:

November 3, 1888: "I have made investigation of small-pox in Sarnia, Canada; 3 cases; perfectly isolated; strict quarantine. No danger of contagion."

*Jacksonville, Fla.*—Dr. Jos. Y. Porter telegraphs as follows:

November 1.—"New cases, 56; deaths, 2; total cases, 4,210; deaths, 356. Patients, St. Luke's, 11; Sand Hills, 4."

November 2: "New cases, 28; deaths, 3; total cases reported, 4,238; deaths, 359. Patients, St. Luke's, 9; Sand Hills, 2."

November 3: "New cases, 25; deaths, 2; total cases, 4,263; deaths, 361. Patients, St. Luke's, 9; Sand Hills, 2."

November 4: "New cases, 11; deaths, 3; total cases, 4,274; deaths, 364. Patients, St. Luke's, 10; Sand Hills, 2."

November 5: "New cases, 39; deaths, 2; total cases, 4,313; deaths, 366. Patients, St. Luke's, 12; Sand Hills, 2."

November 6: "New cases, 42; deaths, 1; total cases, 4,355; deaths 367. Patients, St. Luke's, 10; Sand Hills, 2."

November 7: "New cases, 34; deaths, 3; total cases, 4,389; deaths, 370. Patients, St. Luke's, 12; Sand Hills, 2."

November 8: "New cases, 25; deaths, 3; total cases, 4,414; deaths, 373. Patients, St. Luke's, 14; Sand Hills, 2."

November 9: "New cases, 20; deaths, 6; total cases, 4,434; deaths, 379. Patients, St. Luke's, 14; Sand Hills, 2."

*Camp Perry, Fla.*—Surgeon W. H. H. Hutton telegraphs as follows:

November 2: "Morning report. Present: Officers, 4; guards, 11; employés, 40; refugees arrived, 3; discharged, 11; died, 1; remaining, 124."

November 3: "Morning report. Present: Officers, 4; guards, 11, employés, 39; refugees arrived, 2; discharged, 9; remaining, 117. Fever camp, 4."

November 4: "Morning report. Present: Officers, 4; guards, 11; employés, 39; refugees arrived, 12; discharged, 8; remaining, 121. Fever camp, 4—3 convalescent and 1 critical."

November 5: "Morning report. Present: Officers, 5; guards, 11; employés, 33; refugees arrived, 1; discharged, 37; remaining, 85. Fever camp, 3."

November 6: "Morning report. Present: Officers, 5; guards, 11; employés, 32; refugees arrived, 12; discharged, 11; died, 1; remaining, 85. Mrs. Simmons, from Uptonville, died. Fever camp, none. Conductor Hubbard has the fever this morning."

November 7: "Morning report. Present: Officers, 5; guards, 11; employés, 31; refugees arrived, 7; discharged, 26; remaining, 66. Fever camp, 1—Hubbard, who is doing well."

November 8: "Morning report. Present: Officers, 5; guards, 11; employés, 30; refugees arrived, 10; discharged, 2; remaining, 74. Fever camp, 1."

*Gainesville, Fla.*—Assistant Surgeon Martin telegraphs as follows:

November 2: "Three colored and one white. New cases."

November 3: "One death, J. M. Graham, should have been included in yesterday's report."

November 4: Three new cases, colored."

November 5: "Six new cases, two colored and four whites. Sixteen colored and seven whites under treatment."

November 6: "Two new cases, one death."

November 7: "Two new cases, colored."

November 8: "Three white and three colored, new cases."

November 9: "One new case, one death."

*Enterprise, Fla.*—Dr. J. F. Hartigan, telegraphs as follows:

November 2: "Two new cases. All others doing well. Disease apparently under control."

November 3: "No new cases. All others convalescing and well. Made two autopsies."

*Live Oak, Fla.*—Passed Assistant Surgeon Urquhart telegraphs as follows:

November 1: "Doctor Hankins reports two suspicious cases this morning."

November 2: "Doctor Hankins reports 4 cases here."

Assistant Surgeon Geddings telegraphs as follows:

November 6: "Arrived here to-day. Total number cases to date, 7; 1 death; 1 case under treatment, very sick. Town almost depopulated and in bad sanitary condition."

November 8: "No new cases. Last case eight days old, and progressing favorably. Am having town cleaned and disinfected."

*Palmetto, Fla.*—M. B. Harrison telegraphs as follows:

November 6: "For week ending 5 p. m., Monday, November 5, at Palmetto Fla., there were two new cases of yellow fever; deaths, 1. Total number cases to date, 84; total number deaths to date, 9."

## MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—								
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
New York, N. Y.....	Nov. 3.....	1,541,652	630	.....	.....	.....	.....	.....	6	21	39	7
Philadelphia, Pa.....	Oct. 27.....	1,016,758	336	.....	.....	.....	.....	.....	11	8	7	.....
Chicago, Ill.....	Nov. 3.....	800,000	231	.....	.....	.....	.....	.....	12	6	21	2
St. Louis, Mo.....	Oct. 30.....	440,000	150	.....	.....	.....	.....	.....	3	1	7	.....
Baltimore, Md.....	Nov. 3.....	431,879	152	.....	.....	.....	.....	.....	4	.....	5	.....
Boston, Mass.....	Nov. 3.....	415,000	182	.....	.....	.....	.....	.....	8	.....	7	.....
San Francisco, Cal.....	Oct. 26.....	330,000	107	.....	.....	.....	.....	.....	1	1	2	.....
New Orleans, La.....	Oct. 27.....	248,000	140	.....	.....	.....	.....	.....	.....	.....	10	.....
Detroit, Mich.....	Oct. 27.....	220,000	62	.....	.....	.....	.....	4	.....	1	2	.....
Louisville, Ky.....	Nov. 3.....	200,000	44	.....	.....	.....	.....	.....	3	.....	.....	.....
Milwaukee, Wis.....	Nov. 3.....	195,000	37	.....	.....	.....	.....	.....	.....	.....	1	.....
Kansas City, Mo.....	Nov. 3.....	180,000	35	.....	.....	.....	.....	.....	4	.....	2	.....
Minneapolis, Minn.....	Oct. 27.....	180,000	47	.....	.....	.....	.....	.....	9	1	6	.....
St. Paul, Minn.....	Oct. 27.....	175,000	47	.....	.....	.....	.....	.....	6	.....	6	.....
Newark, N. J.....	Oct. 30.....	174,954	80	.....	.....	.....	.....	.....	4	.....	10	.....
Rochester, N. Y.....	Nov. 3.....	120,000	30	.....	.....	.....	.....	.....	1	.....	1	.....
Richmond, Va.....	Oct. 29.....	100,000	36	.....	.....	.....	.....	.....	3	.....	.....	.....
Denver, Colo.....	Nov. 2.....	96,000	39	.....	.....	.....	.....	.....	6	1	.....	.....
Columbus, Ohio.....	Nov. 3.....	93,000	26	.....	.....	.....	.....	.....	2	.....	1	.....
Toledo, Ohio.....	Nov. 2.....	80,000	17	.....	.....	.....	.....	.....	1	.....	.....	.....
Nashville, Tenn.....	Nov. 3.....	65,153	19	.....	.....	.....	.....	.....	1	.....	.....	.....
Fall River, Mass.....	Nov. 3.....	65,000	27	.....	.....	.....	.....	.....	.....	1	.....	1
Charleston, S. C.....	Oct. 27.....	60,145	35	.....	.....	.....	.....	.....	1	.....	1	1
Evansville, Ind.....	Nov. 3.....	53,000	7	.....	.....	.....	.....	.....	2	.....	.....	.....
Manchester, N. H.....	Oct. 27.....	41,000	17	.....	.....	.....	.....	.....	.....	.....	1	.....
Galveston, Tex.....	Oct. 26.....	40,000	12	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mobile, Ala.....	Nov. 3.....	40,000	14	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portland, Me.....	Nov. 3.....	40,000	11	.....	.....	.....	.....	.....	.....	.....	.....	.....
East Saginaw, Mich.....	Nov. 3.....	33,000	4	.....	.....	.....	.....	.....	.....	.....	.....	.....
Burlington, Iowa.....	Oct. 31.....	30,166	4	.....	.....	.....	.....	.....	.....	.....	.....	.....
Davenport, Iowa.....	Oct. 27.....	30,084	9	.....	.....	.....	.....	.....	.....	.....	5	.....
New Albany, Ind.....	Nov. 3.....	30,000	5	.....	.....	.....	.....	.....	.....	.....	.....	.....
Altoona, Pa.....	Oct. 27.....	29,546	4	.....	.....	.....	.....	.....	.....	.....	1	.....
New Bedford, Mass.....	Nov. 3.....	26,845	9	.....	.....	.....	.....	.....	.....	.....	2	.....
Haverhill, Mass.....	Nov. 3.....	25,009	6	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jackson, Mich.....	Nov. 3.....	22,500	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Newton, Mass.....	Nov. 3.....	21,105	7	.....	.....	.....	.....	.....	2	.....	.....	.....
Newport, R. I.....	Nov. 1.....	20,466	1	.....	.....	.....	.....	.....	.....	.....	.....	.....

By order of the Supervising Surgeon-General.

GEO. W. STONER,  
*Surgeon Marine-Hospital Service.*





## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 46. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,

Washington, D. C., November 16, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended November 16, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended October 27 corresponded to an annual rate of 21.8 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Derby, viz., 15.7, and the highest in Manchester, viz., 32.8 a thousand. Diphtheria caused 5 deaths in Manchester, 2 in Nottingham, and 2 in Halifax.

*London.*—One thousand seven hundred and thirty-seven deaths were registered during the week, including measles, 100; scarlet fever, 25; diphtheria, 31; whooping-cough, 18; enteric fever, 17; diarrhoea and dysentery, 30; and small-pox, 1. The deaths from all causes corresponded to an annual rate of 21.2 a thousand. In greater London 2,102 deaths were registered, corresponding to an annual rate of 19.8 a thousand of the population. In the "outer ring" the deaths included diarrhoea, 11; measles, 9; whooping-cough, 7.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended October 27 in the 16 principal town districts of Ireland was 20.1 a thousand of the population. The lowest rate was recorded in Lisburn, viz., 0.0, and the highest in Sligo, viz., 33.7 a thousand. In Dublin 148 deaths were registered, including measles, 3; scarlet fever, 1; diarrhoea, 11; whooping-cough, 5; enteric fever, 4; and dysentery, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week ended October 27 corresponded to an annual rate of 19.8 a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Leith, viz., 9.8, and the highest in Paisley, viz., 47.2 a thousand. The aggregate number of deaths registered from all causes

was 500, including measles, 26; scarlet fever, 7; diphtheria, 9; whooping-cough, 9; fever, 3; and diarrhœa, 15.

*Nassau, N. P.*—The United States consul in his report dated November 3, 1888, states: "City healthy; strict quarantine against Florida."

*Santiago de Cuba.*—The United States consul, under date of November 13, 1888, denies that this port has at any time, during the past summer, been declared infected.

*Palma Island.*—The United States consul at Teneriffe, in a cablegram dated November 15, 1888, reports existence of yellow fever at Palma Island.

*Havana.*—Ten deaths from yellow fever are reported for the week ended November 2, 1888.

The following report under date of November 3, 1888, has been received from Dr. D. M. Burgess, sanitary inspector, Marine-Hospital Service:

HAVANA, ISLAND OF CUBA, *November 3, 1888.*

No reasonable doubt can be entertained but what Florida is very much exposed to the introduction of such infectious and contagious diseases as may be found at this port, by a class of light-draught, fast-sailing vessels, which sail from here in considerable numbers.

Their ostensible and main business is fishing, and they are called "viveros" or fishing smacks, and while they do quite a fair legitimate business in that way, they often do a more paying one in an illegitimate way: by smuggling different articles into the country on whose coasts they hover for both of the above purposes.

No dirtier or worse smelling vessels probably leave this port, their inside condition and atmosphere being eminently favorable for the reception and growth of such disease germs as thrive in a medium of heat, moisture and filth.

Laying, as many of them do while here (and that for a long time frequently), at wharves notoriously dangerous from an under deposit of sewage and fecal pollutions, if not actual infection, every opportunity is given the cause of yellow fever to get aboard and render the little craft a vile storehouse of infectious disease.

The articles which this class of vessels can smuggle into Florida and Mexico to the greatest advantage are cigars, arguandiente or rum, gin, wine, &c. The inducement to smuggle arguandiente or rum is very great, as the spirit costs only 25 or 30 cents a gallon here and the duty is \$2 a gallon in the United States.

The methods of doing these two branches of business, viz., fishing and smuggling, is an open secret here; and the fishing fraternity, when they have a little confidence in the person to whom they are talking, say very frankly that it is not a difficult thing at all to smuggle their stuffs into Florida or Mexico and there is but little danger in it.

Probably there are as many as 40 or 50 of the vessels alluded to which leave this port, and being nearly all built in the United States they are taken for American vessels till they show their colors. Their method

of doing this business, so dangerous to Florida, is the following, more or less:

They clear or rather leave this port with a simple permit to go out and fish on the high seas or along the coast.

Being small of size and resembling coasters they go out at any time, no one knows when, or where bound.

Once outside of the Morro some of them may go and fish in the waters up about Cardenas or Sagua, others to the banks of Yucatan, while not a small number will try to better their fortunes in the waters and inlets of Florida. Some of those for Florida will transfer their goods to confederates in the neighborhood of Key West, while others will go farther up and hover around the coast of the main land, all the way from Punta Rossa, Charlotte Harbor, up past Tampa or beyond Cedar Keys. Here they are on the alert waiting a favorable opportunity to dispose of what they have, either to confederates or make an unlawful incursion into some of the many inlets, bayous and passes on that coast. Once inside they communicate with the people or settlements they may know, interchange visits and commodities, leaving the articles they have brought, and it is to be suspected and feared, infective disease which their vessels must be charged with from Havanna. When these vessels get in a tight place and are likely to be caught, as rarely happens, they are put ashore and the crew swear that unknown and unavoidable currents and contrary winds have placed them where they are. The vessel is now wrecked by confederates and half the cargo claimed for salvage. Half the cargo pays all concerned very well for the duty is large enough to pay everybody, owner of vessel, crew, confederates, &c.

I am credibly informed of these methods and that many outside of fishing and smuggling circles know of them. Captains of steamers running up along the coast from Charlotte Harbor to Tampa, &c., tell me that they often see about daybreak in the morning this class of vessels, which they know to be Spanish, coming out of the inlets, bayous, and passes.

They have no business there except to smuggle. If their smuggling was limited to articles of commerce it would be bad enough, but when they smuggle into the midst of an unsuspecting people terrible infection and death it is in the highest degree criminal.

There is no State in the Union so exposed in a sanitary sense as Florida is by these smugglers. Nothing calls them to visit any other State. Florida, though not a large State in superficial miles square, has a greater extent of sea coast than any other bordering on the Gulf or Atlantic. Open well-regulated commerce in clean ships, observing all the methods of modern sanitation and carrying only acclimated people is perfectly safe in comparison to this smuggling trade.

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HAVANA, ISLAND OF CUBA, *November 8, 1888.*

SIR: In connection with a communication which I had the honor of sending you on November 3d, in regard to the danger of the introduction into Florida of such infectious and contagious diseases as may be found at this port, by a class of light-draught, fast-sailing vessels,

"viveros" or fishing smacks, schooners of from 30 to 50 tons tonnage, I now forward you the enclosed clipping from a Savannah paper:

"SEIZED FOR SMUGGLING—A STEAMER AND A SCHOONER CAPTURED  
BY THE CRAWFORD.

"NEW ORLEANS, LA., November 4.—A special to the *Picayune* from Key West, Fla., says: 'The Spanish steamer *Engracia*, of Havana, and the American schooner *Legal Tender* were brought here as a prize crew by the revenue cutter *Crawford*. Both vessels were seized on November 1 off Charlotte Harbor, for smuggling rum and tobacco. When apprehended the *Engracia* was transferring contraband goods to the *Legal Tender* in exchange for the latter's cargo of live fish.'"

This clipping is believed to be correct except that the Spanish steamer "*Engracia*" is a Spanish schooner "*Engracia*," and is of the regular vivero or fishing-smack type.

The schooner "*Legal Tender*" is under the United States flag, and sailed from here October 25th with clearance for Key West, with an entire Spanish crew, all acclimated. Enclosed I send you a copy of the bill of health which she took at the time, in which you will see that her sanitary condition was regarded as *suspicious*, as she had been eight days discharging at a suspicious wharf, and from there she sailed.

The Spanish schooner "*Engracia*" (fishing-smack) left here about October 28th or 29th, three or four days after the other, or "*Legal Tender*," and went out with the usual permit to leave and fish on the high sea. Of course no inspector could know just when she left or where she intended to go. I know that she had lain for some time at the wharf where the schooners of her owner always lay; that she sailed directly from there, and that the wharf is a suspicious and doubtless infected place. The sewage, from the infected fortifications the "*Cabaños*," empties right there. Both of those vessels, in a sanitary sense, were very dangerous, although both having an acclimated crew, the extent of the infection with which they may have been reeking, was and could not be revealed by any sickness among them. Both were smuggling, and, of course the "*Legal Tender*" intended to dispose of her cargo at some point on the main land in Florida. This is one instance in which this class of vessels has been caught in their dangerous game, so injurious to the health of that State. I am thoroughly satisfied that where one is caught one hundred escape without any more detection than is known among the fishing fraternity, their confederates, friends, and quasi acquaintances. Until the whole extensive coast of Florida is so thoroughly patrolled as to prevent any possibility of this sort of thing (smuggling in this way), I am afraid that we shall every now and then have yellow fever cropping out in some place there and wonder how on earth it got there, leading us, possibly, to suspect some legal, well regulated enterprise as being the innocent cause.

Very respectfully, your obedient servant,

D. M. BURGESS,  
Sanitary Inspector, M.-H. S.



## MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Menses.
Paris.....	Oct. 20.....	2,260,945	928			3		15		19	7
Paris.....	Oct. 27.....	2,260,945	926			3		18	3	25	6
Glasgow.....	Oct. 27.....	545,678	211					2	4	5	
Warsaw.....	Oct. 20.....	444,814	240			5					
Calcutta.....	Sept. 22.....	433,219	207	18		1					
Rome.....	Sept. 22.....	391,188	139					6			
Amsterdam.....	Oct. 27.....	389,916	135					1		4	
Copenhagen.....	Oct. 17.....	300,000	122					1	4	1	
Munich.....	Oct. 20.....	275,000	154					1	3	3	
Palermo.....	Oct. 20.....	250,000	62		1					1	
Palermo.....	Oct. 27.....	250,000	76							3	
Genoa.....	Oct. 20.....	179,802	77		1						
Genoa.....	Oct. 27.....	179,802	95			2	3				
Toronto.....	Nov. 3.....	130,000	34				5				
Stuttgart.....	Oct. 27.....	125,510	43					1		4	
Bremen.....	Oct. 20.....	122,000	31					1	1	1	
Havre.....	Oct. 27.....	112,074	67		1			6	1		
Barmen.....	Oct. 20.....	109,000	29								
Leghorn.....	Oct. 28.....	102,540	36				1				
Mayence.....	Oct. 20.....	65,802	40						1		
Cadiz.....	Oct. 27.....	65,028	42								
Guayaquil.....	Sept. 22.....	35,000	108			3		26			30
Guayaquil.....	Sept. 29.....	35,000	96					25			40
Guayaquil.....	Oct. 6.....	35,000	128					27			66
Guayaquil.....	Oct. 13.....	35,000	105					15			65
Vera Cruz.....	Nov. 1.....	23,800	27								
Gibraltar.....	Oct. 21.....	23,631	13					1			
Kingston, Canada.....	Nov. 2.....	17,300	1								
Antigua.....	Oct. 28.....	15,847	14								
Catargena, U. S. of Colo.....	Oct. 27.....	13,000	16								
Turk's Island.....	Oct. 24.....	5,000	6								
Paoli, Peru.....	Oct. 27.....	4,000									
Bluefields.....	Oct. 15.....	2,000									
San Juan del Norte.....	Oct. 15.....	780									

## UNITED STATES.

*Enterprise, Fla.*, October 28, 1888.—Dr. J. F. Hartigan reported as follows:

I arrived here yesterday afternoon, and ere this reaches you will be informed of the aspect of affairs. This place is thoroughly infected, and probably new cases and deaths will occur daily. As I understand my duties they are to fully investigate and trace the origin of the trouble. I have already formed my impressions, but prefer to wait till I obtain a complete history of the business, which will occupy a week or so.

We are now completely isolated.

For a radius of three miles, unquestionably, the place is infected, and the people of Sanford are in a "panicky" condition, which makes it difficult to communicate with them. I shall continue to make all the autopsies I can, noting any deviations, at the same time endeavor to trace this to the beginning, which it may be astonishing to say dates as far back as May, and apparently due to infection from Jacksonville.

There is much to do here. By mutual arrangement, Dr. Posey has his hands full with the administrative department alone. Dr. Caldwell is attending mainly to the patients, while it will take me the time men-

tioned to accomplish the other necessary work, seeing a few patients and doing any autopsies.

There are not more than five white citizens left. Even the poobahs and board of health have skipped.

Dr. Caldwell is working most efficiently night and day, but he feels that he is in a delicate position, not having official authority to act. An appointment to that effect would be a recognition of merit well deserved.

*Tampa, Fla.*—Dr. J. P. Wall reported as follows :

November 7 : "For the week ending to-day, November 7, I have to report 12 new cases of yellow fever and 1 death, an adult male, on the 5th instant. This case was not seen by a physician till sixth day of illness. I had a post mortem made and found the characteristic lesions of yellow fever.

"For the last three weeks the weather has been very warm and the number of cases for the past two weeks has been larger.

"No cases of yellow fever in the county outside of Tampa. Total number of deaths since the 7th of August 7."

*Live Oak, Fla.*—Assistant Surgeon H. D. Geddings, Marine-Hospital Service, reported under date of November 6, 1888, as follows :

In pursuance of telegraphic orders received from the Surgeon-General's Office, through Surgeon W. H. H. Hutton, Marine-Hospital Service, I left Camp Perry, Fla., this morning at 8.15 a. m., and arrived at this point at 1 p. m.

I at once instituted an investigation as to the existence of yellow fever in the town, and find that up to this time there have been 7 cases of yellow fever ; 5 of a very mild type and 2 grave cases. One of the latter died several days ago, and on post mortem examination by Dr. Martin was pronounced yellow fever. The mild cases occurred among those who had been exposed during the illness of the patient ; followed in rapid succession and were speedily convalescent. Six days ago Mr. Woodward, the agent of the F. R. & N. Co. at this point, left town with his family and went four miles into the country. He was seized that night with a violent chill, followed by fever, and returned to Live Oak next morning. I visited him this afternoon, and find his case a typical one, and at this time he is a critically ill patient, though with favorable chances of recovery. All of these cases have been and are under the charge of Dr. Haskins, a local practitioner, from whom most of my information is derived.

A hasty examination shows a very sad lack of sanitary precaution, and a correspondingly bad hygienic condition. A vigorous and prompt cleaning and disinfection alone will save the outbreak from extending far and wide among the inhabitants of the town who are left within its limits. I would respectfully beg for authority to proceed in this direction, and for material to carry it out.

The white population has largely left the town, and so far as I can see or learn, no distress as yet exists among those who remain, or among the colored portion of the community.

This communication is written in confirmation and amplification of my telegram of this date.

*Jacksonville, Fla.*—Dr. Jos. Y. Porter telegraphs as follows:

November 10: "New cases, 33; total cases, 4,467; deaths, 384; patients, St. Luke's, 12; Sand Hills, 2.

Honsman, president board of health, Madison County, wires a death from yellow fever at Ellaville, with other cases sick; wants expert to make post mortem. Have requested Hutton to send Guiteras.

November 11: "New cases, 12; deaths, 1; total cases, 4,479; deaths, 385; patients, St. Luke's, 15; Sand Hills, 2. Attending physician at Ellaville reports case not suspicious, will not allow post mortem."

November 12: "New cases, 35; deaths, 3; total cases, 4,514; deaths, 388; patients, St. Luke's, 15; Sand Hills, 2. President board of health, Madison County, wires that he has quarantined against Ellaville until expert is permitted to report on sickness there.

November 13: "New cases, 7; deaths, 2; total cases, 4,521; deaths, 390; patients, St. Luke's, 14; the Sand Hill permanently closed, all patients discharged, and buildings turned back to the Duval County board of health.

November 14: "New cases, 34; deaths, 2; total cases (corrected), 4,552; deaths, 392; patients, St. Luke's, 14. Weather favorable for developing fever, showery and warm.

*Camp Perry, Fla.*—Surgeon W. H. H. Hutton telegraphs as follows:

November 10: "Morning report. Present, officers, 5; guards, 10; employés, 31. Refugees arrived, 10; discharged, 20; remaining, 76. Fever camp, 2; Conductor Hubbard has recovered."

November 11: "Morning report. Present, officers, 5; guards, 11; employés, 31. Refugees arrived, 8; discharged, 6; remaining, 86. Fever camp, 3; 2 cases brought from Callahan yesterday, both negroes."

November 12: "Morning report. Present, officers, 4; guards, 10; employés, 31. Refugees arrived, none; discharged, 6; remaining, 70. Fever camp, 2. Posey reports 4 new cases and 1 death at Enterprise yesterday."

November 13: "Morning report. Present, officers, 4; guards, 10; employés, 31. Refugees arrived, 17; discharged, 1; remaining, 86. Fever camp 2, convalescent."

November 14: "Morning report. Present, officers, 4; guards, 10; employés, 31. Refugees arrived, 14; discharged, 8; remaining, 92. Fever camp 1, sick on arrival. Geddings reports 2 cases at Ellaville, also convalescent from same."

November 16: "Morning report. Present, officers, 1; guards, 10;

employés, 30. Refugees arrived, 1; discharged, 18; remaining, 78. Fever camp, 1.

*Gainesville, Fla.*—Assistant Surgeon Martin telegraphs as follows:

November 10: "One colored and 1 white new cases."

November 11: "Six cases white, and 2 colored. One death, white. Four of the white cases in 1 family, 2 miles in country."

November 13: "One white, 2 colored, new cases. One death, white."

November 14: "Two new cases, colored."

November 15: Four new cases, 2 white and 2 colored.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Nov. 10.	1,542,524	627	.....	.....	1	.....	.....	10	26	26	8	10
Philadelphia, Pa.	Nov. 3.	1,016,758	323	.....	.....	.....	.....	.....	13	11	10	1	2
Brooklyn N. Y.	Nov. 3.	805,855	289	.....	.....	.....	.....	.....	12	6	16	1	4
Baltimore, Md.	Nov. 10.	431,879	118	.....	.....	.....	.....	.....	4	1	7	.....	4
Cincinnati, Ohio.	Nov. 10.	255,139	77	.....	.....	.....	.....	.....	7	.....	1	1	.....
New Orleans, La.	Nov. 3.	248,000	115	.....	.....	.....	.....	.....	.....	.....	3	.....	.....
Pittsburgh, Pa.	Nov. 10.	230,000	76	.....	.....	.....	.....	.....	2	.....	6	2	3
Milwaukee, Wis.	Nov. 10.	195,000	45	.....	.....	.....	.....	.....	1	2	.....	.....	.....
Minneapolis, Minn.	Nov. 3.	180,000	58	.....	.....	.....	.....	.....	9	1	4	.....	.....
St. Paul, Minn.	Nov. 3.	175,000	42	.....	.....	.....	.....	.....	8	1	5	.....	.....
Newark, N. J.	Nov. 13.	152,988	66	.....	.....	.....	.....	.....	4	.....	6	.....	.....
Rochester, N. Y.	Nov. 10.	120,000	25	.....	.....	.....	.....	.....	1	.....	3	.....	.....
Columbus, Ohio.	Nov. 10.	101,885	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Richmond, Va.	Nov. 5.	.....	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Denver, Colo.	Nov. 9.	96,000	30	.....	.....	.....	.....	.....	10	.....	.....	1	.....
Toledo, Ohio.	Nov. 9.	80,000	21	.....	.....	.....	.....	.....	1	.....	1	.....	.....
Nashville, Tenn.	Nov. 10.	65,153	31	.....	.....	.....	.....	.....	2	.....	.....	.....	.....
Charleston, S. C.	Nov. 10.	60,145	28	.....	.....	.....	.....	.....	2	.....	.....	.....	.....
Evansville, Ind.	Nov. 10.	53,000	14	.....	.....	.....	.....	.....	4	.....	.....	.....	.....
Savannah, Ga.	Nov. 9.	52,827	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lynn, Mass.	Nov. 9.	50,000	15	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Manchester, N. H.	Nov. 3.	41,000	20	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Mobile, Ala.	Nov. 10.	40,000	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Galveston, Tex.	Nov. 2.	40,000	16	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Portland, Me.	Nov. 10.	40,000	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
East Saginaw, Mich.	Nov. 10.	33,000	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Albany, Ind.	Nov. 9.	30,000	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Altoona, Pa.	Nov. 3.	29,546	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Auburn, N. Y.	Nov. 10.	26,000	9	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Haverhill, Mass.	Nov. 10.	25,000	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jackson, Mich.	Nov. 10.	22,500	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Newport, R. I.	Nov. 9.	20,466	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Keokuk, Iowa.	Nov. 10.	16,000	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pensacola, Fla.	Nov. 10.	15,000	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 47. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., November 23, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended November 23, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended November 3 corresponded to an annual rate of 19.6 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 11.5, and the highest in Newcastle-upon-Tyne, viz., 29.9 a thousand. Diphtheria caused 2 deaths in Manchester, 2 in Birmingham, 3 in Salford, and 4 in Newcastle-upon-Tyne.

*London.*—One thousand six hundred and thirteen deaths were registered during the week, including measles, 88; scarlet fever, 24; diphtheria, 32; whooping-cough, 19; enteric fever, 22; diarrhoea and dysentery, 34; and small-pox, 1. The deaths from all causes corresponded to an annual rate of 19.7 a thousand. In greater London 2,025 deaths were registered, corresponding to an annual rate of 19.1 a thousand of the population. In the "outer ring" the deaths included diarrhoea, 10; measles, 11; diphtheria, 10.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended November 3 in the 16 principal town districts of Ireland was 21.2 a thousand of the population. The lowest rate was recorded in Wexford, viz., 4.3, and the highest in Armagh, viz., 46.5 a thousand. In Dublin 165 deaths were registered, including measles, 2; scarlet fever, 1; diarrhoea, 1; whooping-cough, 6; enteric fever, 8; typhus, 2; diphtheria, 1.

*Marseilles.*—Eight hundred and ten deaths were registered during the month of October, 1888, including small-pox, 6; enteric fever, 27; scarlet fever, 1; diphtheria croup, 36; measles, 3; whooping cough, 12; and diarrhoea enteritis, 61. The consul under date of November 2, reported that "the health of the city is good, there being a notable absence of epidemic diseases of all kinds."



*Montevideo.*—Four hundred and twenty deaths were registered during the month of August, 1888, including small-pox, 33; enteric and typhus fever, 6; diphtheria, 37.

*Cardenas.*—The United States consul in his report for the week ended November 16, 1888, states: "Warm weather and dry. No more fever cases in town. Harbor, good health."

*Nassau, N. P.*—November 10, 1888: City very healthy. Strict quarantine against Cuba and Florida.

*Georgetown, Demerara.*—The United States consul under date of October 27, 1888, states that "the three cases of yellow fever reported convalescent at the close of the previous week, are believed to have entirely recovered. I have the authority of the Surgeon-General of the Colony for the statement that there is no infectious disease prevailing, nor any suspicion of such."

*Ruatan.*—The United States consul in his dispatch dated November 1, 1888, states that "an epidemic similar to that experienced in this island last year, broke out in Truxillo during the month of August last and continued, with fatal effects, until the beginning of the rainy season, about two weeks since. I inclose a list of the citizens of the United States who have fallen victims to this terrible malady, which, in all fatal cases, has presented at least one notable characteristic or yellow fever, viz., black vomit. Some physicians call it 'hemorrhagic pernicious fever,' while others confess that it is the veritable 'Yellow Jack.' Some of the Americans whose names appear in the list were men of capital, and representatives of American companies operating in this country.

"Mr. Ord was manager of the 'Aguan Company' of New York, who have a bank in Truxillo. Messrs. Rector and Milligan were owners and representatives of large mining interests in the interior. The last named gentlemen were accompanied by their wives, who fortunately escaped, and I had the satisfaction of assisting them to a passage to the United States."

*Havana.*—Eleven deaths from yellow fever are reported for the week ended November 9, 1888.

*San Juan, P. R.*—Two cases of yellow fever are reported for the week ended November 3, 1888.

*Sarnia, Ontario.*—Dr. W. Lehmann, provincial health inspector, in a communication to the chairman of the board of health, dated November 15, 1888, writes as follows:

DEAR SIR: At the request of the secretary of the provincial board of health I have visited your hospitals and quarantines. In conjunc-

tion with Doctor Oliver, your medical health officer, I have made a thorough examination: I find nine cases of small-pox, five in the hospitals, and four of one family in an isolated house. I find the patients doing well, their medical attendance and comforts satisfactory. Quarantine and disinfection are strictly enforced, and I believe that your present efforts, with compulsory vaccination, which I strongly recommend, will soon free your town of the disease.

I have the honor to be, sir, yours, &c.,

W. LEHMANN, M. D.,  
Provincial Medical Health Inspector.

Mr. GEORGE LEYS,  
Chairman of Board of Health, Sarnia.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
Paris .....	Nov. 3.....	2,260,945	946	.....	.....	3	.....	18	2	31	17
Glasgow .....	Nov. 3.....	545,678	200	.....	.....	.....	.....	.....	1	1	.....
Warsaw .....	Oct. 27.....	444,814	258	.....	.....	4	.....	.....	21	13	.....
Copenhagen .....	Oct. 23.....	300,000	126	.....	.....	.....	.....	1	2	.....	.....
Copenhagen .....	Oct. 30.....	300,000	135	.....	.....	.....	.....	4	2	4	.....
Palermo .....	Nov. 3.....	250,000	70	.....	.....	.....	.....	.....	.....	.....	.....
Belfast .....	Nov. 3.....	227,022	100	.....	.....	.....	.....	1	2	1	.....
Genoa .....	Nov. 3.....	179,822	97	.....	.....	1	9	.....	.....	.....	.....
Toronto .....	Nov. 10.....	130,000	19	.....	.....	.....	.....	2	.....	.....	.....
Barmen .....	Oct. 27.....	109,000	40	.....	.....	.....	.....	.....	.....	1	.....
Leghorn .....	Nov. 4.....	102,540	41	.....	.....	.....	.....	1	.....	.....	.....
Cadiz .....	Nov. 3.....	65,028	43	.....	.....	.....	.....	.....	.....	.....	.....
Bermuda .....	Nov. 13.....	30,045	.....	.....	.....	.....	.....	6	.....	.....	.....
Curaçao .....	Nov. 6.....	25,000	5	.....	.....	.....	.....	.....	.....	.....	.....
Vera Cruz .....	Nov. 8.....	23,800	28	.....	.....	.....	.....	.....	.....	.....	.....
Kingston, Canada .....	Nov. 16.....	17,300	1	.....	.....	.....	.....	.....	.....	.....	.....
Laguayra .....	Oct. 27.....	7,428	6	.....	.....	.....	.....	.....	.....	.....	.....
Bluefields .....	Nov. 10.....	2,000	1	.....	.....	.....	.....	.....	.....	.....	.....
San Juan del Norte .....	Oct. 22.....	780	1	.....	.....	.....	.....	.....	.....	.....	.....

UNITED STATES.

Port Huron, Mich.—Nov. 17, 1888.—Acting Assistant Surgeon J. K. Farnum writes as follows :

Have just returned from Sarnia, Ont., and while there, visited the patients with Doctor Oliver of Sarnia. The three original patients—one child 9 years old, came from Toronto, Ont.; one Indian student from Owen Sound, 20 years; one woman from Toronto, Ont., 30 years—are all convalescent. From these cases have developed six mild cases, among those quarantined with the original, and all are doing well. All strictly quarantined in a pest-house at a good distance from the city of Sarnia. The mayor of Sarnia has issued orders for compulsory vaccination. I think there is no danger of Port Huron being infected, although our board of health is very deficient. Have had no cases as yet, although papers report some. Could you send me some points by mail to use on the employés of the ferry boats across the river, as we have the large boats plying constantly.

A supply of vaccine virus has been sent to Acting Assistant Surgeon Farnum.

*Portland, Oregon.*—November 9, 1888: Assistant Surgeon Thomas B. Perry, reports existence of small-pox in Portland and vicinity.

*Tampa, Fla.*—Dr. J. P. Wall, president board of health, reported as follows, November 14, 1888:

For the week ending to-day there have been reported 6 new cases of yellow fever—5 in the city limits and 1 in the country just outside—and 2 deaths. One of the deaths was that of a woman outside of the city. Her case was complicated by the birth of a child (still-born) directly after being taken with the fever. She died on the 10th inst., and was sick from the 2d inst., and was not seen by a physician till the 8th inst., when I went to see her. The other death was that of a man and occurred on the 11th inst. after an illness of 12 days. This makes the total number of deaths since the 7th of August, 9. No fever at any other place in the county.

TAMPA, FLA., November 17, 1888.

The inclosed clipping is from a New Orleans newspaper and is so full of inaccuracies that I venture to call your attention to them. In the first place the yellow fever did not break out here last year in August, nor was there any here as late as the 2d of September, when I left to attend the Ninth International Medical Congress in Washington. I got back to Tampa on the 25th of September, and learned that the man Turk had died on the 22d of that month with what the physicians who saw him pronounced hemorrhagi malarial fever. There was no epidemic of yellow fever here when I got home. During the week following the 25th of September, I saw 5 suspicious cases of a mild type, and on the 2d of October, 2 cases, which on the 4th of October, I announced to the board of health to be yellow fever; and on the 5th publicly declared yellow fever to be in Tampa, and advised the people to leave the place. On the 7th or 8th of October I wired you, in answer to inquiry, that yellow fever was here. So you must see that the statement that the presence of fever in Tampa, was concealed until the 21st of October, is wholly erroneous and without foundation in fact. From the best information that I can get, the fever probably appeared here as early as the middle of September, during my absence.

The city council and not the board of health declared the epidemic over about the 19th of December, and refugees came flocking back into the place, but so far as I know not a returned refugee took the fever, though there were a few cases in January, and one death as late as January 30th. But these cases did not occur in returned refugees, but among those who had been in Tampa more or less during the epidemic.

The fever got into Plant City in October, but was not recognized till the 14th of November, when the first death occurred, a full month after its first appearance there in a refugee from Tampa. And all this time Plant City was keeping up a strict quarantine against Tampa, and enjoying free intercourse by rail with the outside world. In fact at no time during the winter was any quarantine instituted against Plant City, the majority of her physicians declaring the fever to be malarial.

In April a case was seen by me in Tampa's corporate limits, though

practically in the country. Some of the family had had the fever during the epidemic, and this case was in a member of the family who had escaped then. After this there was no case of fever in Tampa until the 11th of July, when Mr. Waterman, a commercial traveller, returned from Manatee on the 10th, and was taken sick on the 11th, and died on the 21st of July.

Now, so far as I am concerned, I never denied the presence of yellow fever here at any time, when it was here to my knowledge during the winter or any other time; nor was there any here, except the case in April, from January till July, when the man Waterman sickened and died.

Whether McCormick had the fever\* or not I do not know. He left here the 27th of July and there was no other case here till the 7th of August. And in view of all the facts in connection with what has occurred at other points, I am strongly inclined now to the opinion that had not Mr. Waterman contracted the disease in Manatee and been sick in Tampa, we would not have had any fever here this summer.

\* \* \* \* \*

At the proper time I expect to write the history of the epidemic in Tampa, when these false statements will be duly noticed.

I have taken great pains in investigating the introduction of the fever into Tampa, and consequently know something about the facts.

All the concealment of cases of yellow fever that I ever heard anything about—and this, Doctor Caldwell charged in *The Times-Union* in August, in answer to Doctor Holt—was the Orange county and Duval county boards of health. So I do not wish to be misrepresented in this matter by your report.

Apologizing for the length of this letter, I am, with high esteem,  
Yours very truly,

JOHN P. WALL.

Dr. J. B. HAMILTON.

#### LETTER FROM DOCTOR MAXWELL ON THE ORIGIN OF THE FEVER.

JACKSONVILLE, FLA., November 17, 1888.

DEAR SIR: It may aid you in making a report of the conduct of yellow fever in Florida, during the last two years, to be informed of what you probably do not know, viz.: that a case of the fever came to this city, from Tampa, in the latter part of October, 1887.

The facts are, as related to me by the man himself, that a Mr. Lane, an employé of the music house of A. B. Campbell & Co., went into Tampa twice during the month of October, 1887, the latter visit being in the latest days of that month; that he was taken sick with fever whilst in Tampa the last time, and came directly to his home and family in this city; that he was treated by the late Doctor Leonard, who died of the fever during the prevailing epidemic, and his disease was called "yellow jaundice," but from his description of the symptoms and course of the disease, in connection with his recent exposure in Tampa, I have no doubt was yellow fever.

I was, by invitation of Dr. Jno. P. Wall, chairman of the Hillsboro' county board of health, in Tampa at the time Mr. Lane said he was there and was taken sick, and the fever was then a widely prevalent and somewhat malignant epidemic.

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\* McCormick's case was undoubtedly yellow fever.—J. B. H.



There is good reason to believe that a disease which prevailed in Jacksonville in midwinter of 1887-'88, which by a euphemism was called "society fever," was, in fact, as some of the local physicians said at the time, and Doctors Wall and Porter told me in February, they suspected yellow fever. Of course in the preparation of a history of this disease you must needs have all the facts attainable. It is to assist you in reaching that end, that I write this note.

Respectfully,

GEO. TROUP MAXWELL, M. D.

N. B.—Campbell's music-store is next door to Bucky's store, which Dr. Guiteras defined as the "focus of infection" last fall.

P. S.—Having a knowledge of the topography of Bucky's and adjoining stores, obtained during a residence in Jacksonville twenty years ago, I examined their condition a few days after my return in August last, and reported the terribly insanitary condition of the ground under their floors, in *The Times-Union*. An examination was ordered by the citizens' auxiliary association, but the inspector's report has not been made public. It is understood that his report will corroborate my assertions, and show inexcusable if not criminal culpability on the part of the health officials of the city and country.

MAXWELL.

*Camp Perry, Fla.*—Surgeon W. H. H. Hutton telegraphs as follows:

November 17: "Morning report: Present, officers, 5; guards, 10; employés, 30. Refugees arrived, 7; discharged, 6; remaining, 79. Fever camp, 1; critical."

November 18: "Morning report: Present, officers, 4; guards, 10; employés, 30. Refugees arrived, 10; discharged, 16; remaining, 73. Fever camp, 1; improving."

November 19: "Morning report: Present, officers, 5; guards, 10; employés, 30. Refugees arrived, 18; discharged, 9; remaining, 82. Fever camp, 1. Geddings has just returned from Green Cove Springs, Fla., and reports 3 serious cases, 1 moribund."

November 20: "Morning report: Present, officers, 5; guards, 10; employés, 31. Refugees arrived, 20; discharged, 6; remaining, 96. Fever camp, 1."

November 21: "Morning report: Present, officers, 5; guards, 5; employés, 28. Refugees arrived, 2; discharged, 13; remaining, 85. Fever camp, 1; recovered. Weather very cold."

November 22: "Morning report: Present, officers, 5; guards, 5; employés, 28. Refugees arrived, 7; discharged, 2; remaining, 90. Fever camp, 1, recovered."

November 23: "Morning report: Present, officers, 5; guards, 5; employés, 28. Refugees arrived, 4; discharged, 19; remaining, 75. Fever camp closed."

*Jacksonville, Fla.*—Dr. Jos. Y. Porter telegraphs as follows:

November 15: "New cases, 16; deaths, 4. Total cases, 4,568; deaths, 396. Patients, St. Luke's, 14."



November 17: "New cases, 13; deaths, 1. Total cases, 4,596; deaths, 397. Patients, St. Luke's, 14."

November 19: "New cases, 8; deaths, 4. Total cases, 4,621; deaths, 402. Patients, St. Luke's, 13."

November 20: "New cases, 22; deaths, 1. Total cases, 4,643; deaths, 403. Patients, St. Luke's, 17."

November, 21: "New cases, 3; deaths, 2. Total cases, 4,646; deaths, 405. Patients, St. Luke's, 15."

November 22: "New cases, 13; deaths, none. Total cases, 4,659; deaths, 405. Patients, St. Luke's, 14."

*Gainesville, Fla.*—Assistant Surgeon Martin telegraphs as follows:

November 17: "Six new cases; 2 white, 4 colored."

November 18: "Five new cases; 2 white, 3 colored. One death, white."

November 19: "Five new cases; 1 white, 4 colored."

November 20: "Three new cases; 1 white, 2 colored."

November 21: "Two new cases; colored."

November 22: "Two new cases; colored. No frost yet; temperature 49 degees."

*Fernandina, Fla.*—Surgeon Ross telegraphs as follows:

November 21: "One new case of yellow fever reported for 24 hours ended 6 P. M., November 20. Careful analysis of status showed 4 cases of yellow fever under treatment in Fernandina yesterday. On no day since my arrival here has total number of cases under treatment been so small as yesterday. Yellow fever pabulum about exhausted."

November 22: "Theo. Fairbanks, the acting railroad agent at Hart's Road, attacked to-day; engine sent out to bring him to hospital here for treatment. Shall visit and inspect Hart's Road to-morrow. For 24 hours ending 6 p. m., November 22, no new cases, and four cases reported as total under treatment in Fernandina. Good reason to believe that there are two additional cases of yellow fever under treatment which are not reported as such. There have been about 1,200 cases, and about 38 deaths of fever here this summer. The great majority of these occurred in August and September, before my arrival. The rule, with remarkably few exceptions, is that persons here who have had yellow fever in former epidemics have not had fever this year and no person, I believe, has had more than one attack this season."

*Palmetto, Fla.*—Inspector M. B. Harrison telegraphs as follows:

November 15: "For week ended November 12 there were, at Palmetto, new cases, 9; deaths 1. Total cases to date, 84; deaths, 10."

*Palatka, Fla.*—Assistant Surgeon Magruder telegraphs as follows:

November 17: "Three cases, one having black vomit, reported at Green Cove Springs to-day."

*Enterprise, Fla.*—G. F. Carlile, secretary board of health, telegraphs as follows:

November 19: "Four new cases last 48 hours."

November 21: "Surgeon Hutton reports 8 new cases at *Enterprise*."

Dr. J. F. Hartigan telegraphs as follows:

*Brooksville, Fla.*, November 19, 1888.—"Have inspected Dade City and Brooksville; both places healthy. Leave for Leesburg to-day."

*Savare's, Fla.*, November 20, 1888.—"Am at Eustis to-day; place healthy. Will leave for Ocala to-morrow."

*Leesburg, Fla.*, November 21.—"Am at Leesburg to-day. No infectious diseases. Leave for Ocala this afternoon."

*Ocala, Fla.*, November 22.—"Am at Ocala to-day. Place healthy. My tour is completed. Will leave for Washington to-morrow."

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Varicoid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
New York, N. Y.	Nov. 17	1,543,396	600	.....	.....	.....	.....	.....	13	25	24	12	7
Philadelphia, Pa.	Nov. 10	1,016,758	334	.....	.....	.....	.....	.....	13	12	8	.....	.....
Philadelphia, Pa.	Nov. 17	1,016,758	354	.....	.....	.....	.....	.....	9	5	18	.....	5
Brooklyn, N. Y.	Nov. 10	805,855	256	.....	.....	.....	.....	.....	4	5	17	1	3
Brooklyn, N. Y.	Nov. 17	805,855	296	.....	.....	.....	.....	.....	8	2	33	1	5
Baltimore, Md.	Nov. 17	431,879	138	.....	.....	.....	.....	.....	3	1	6	.....	2
San Francisco, Cal.	Nov. 9	330,000	145	.....	.....	.....	.....	.....	3	.....	.....	.....	1
Cincinnati, Ohio.	Nov. 17	255,139	85	.....	.....	.....	.....	.....	6	1	4	.....	.....
New Orleans, La.	Nov. 10	248,000	104	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Milwaukee, Wis.	Nov. 17	195,000	57	.....	.....	.....	.....	.....	.....	1	2	.....	.....
Minneapolis, Minn.	Nov. 10	180,000	47	.....	.....	.....	.....	.....	4	.....	4	.....	1
Minneapolis, Minn.	Nov. 17	180,000	39	.....	.....	.....	.....	.....	3	1	3	.....	1
St. Paul, Minn.	Nov. 17	175,000	32	.....	.....	.....	.....	.....	4	1	3	.....	.....
Rochester, N. Y.	Nov. 17	120,000	33	.....	.....	.....	.....	.....	.....	.....	3	.....	.....
Columbus, Ohio.	Nov. 17	101,885	17	.....	.....	.....	.....	.....	2	.....	.....	.....	.....
Richmond, Va.	Nov. 10	100,000	30	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Denver, Colo.	Nov. 16	96,000	38	.....	.....	.....	.....	.....	6	.....	4	.....	.....
Toledo, Ohio.	Nov. 16	80,000	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fall River, Mass.	Nov. 17	65,000	23	.....	.....	.....	.....	.....	.....	.....	3	1	.....
Charleston, S. C.	Nov. 17	60,145	37	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Lynn, Mass.	Nov. 17	50,000	15	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Manchester, N. H.	Nov. 10	41,000	24	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Portland, Me.	Nov. 17	40,000	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Galveston, Tex.	Nov. 9	40,000	13	.....	.....	.....	.....	.....	1	.....	1	.....	.....
Davenport, Iowa.	Nov. 10	33,715	11	.....	.....	.....	.....	.....	.....	3	.....	.....	.....
East Saginaw, Mich.	Nov. 17	33,000	6	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Altoona, Pa.	Nov. 10	29,546	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Altoona, Pa.	Nov. 17	29,546	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Auburn, N. Y.	Nov. 19	26,000	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Haverhill, Mass.	Nov. 17	25,000	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Newton, Mass.	Nov. 17	21,105	5	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Newport, R. I.	Nov. 15	20,466	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Keokuk, Iowa.	Nov. 17	16,000	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pensacola, Fla.	Nov. 17	15,000	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

JOHN B. HAMILTON,

Supervising Surgeon-General, Marine-Hospital Service.

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 48. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., November 30, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended November 30, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended November 10 corresponded to an annual rate of 19.0 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Nottingham, viz., 12.2, and the highest in Newcastle-upon-Tyne, viz., 25.6 a thousand. Diphtheria caused 2 deaths in Liverpool and 6 in Salford. Small-pox caused 1 death in Hull and 1 in Preston.

*London.*—One thousand five hundred and twenty deaths were registered during the week, including measles, 109; scarlet fever, 18; diphtheria, 34; whooping-cough, 15; enteric fever, 14; diarrhœa and dysentery, 18. The deaths from all causes corresponded to an annual rate of 18.5 a thousand. In greater London 1,896 deaths were registered, corresponding to an annual rate of 17.9 a thousand of the population. In the "outer ring" the deaths included diarrhœa, 11; measles, 9; whooping-cough, 6; scarlet fever, 6; diphtheria, 6.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended November 10 in the 16 principal town districts of Ireland was 19.0 a thousand of the population. The lowest rate was recorded in Wexford, viz., 4.3, and the highest in Lurgan, viz., 35.9 a thousand. In Dublin 186 deaths were registered, including measles, 3; diarrhœa, 2; whooping-cough, 4; enteric fever, 9; dysentery, 1, and diphtheria, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week ended November 10 corresponded to an annual rate of 19.1 a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Perth, viz., 11.2, and the highest in Paisley, viz., 36.3 a thousand. The aggregate number of deaths registered from all causes was 484, including measles, 27; scarlet fever, 9; diphtheria, 8; whooping-cough, 9; fever, 8, and diarrhœa, 9.

*Bahia.*—The United States consul in his dispatch dated October 30, 1888, states that "the sanitary condition of this city and the adjacent country is good, and without any suspicion of plague, cholera or contagious distemper whatever."

*Trapani, Italy.*—The United States consular agent reports 332 deaths from small-pox for the month of October, 1888, "almost all children, not vaccinated."

*Havana, Cuba.*—Five deaths from yellow fever are reported for the week ended November 16, 1888.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
Rio de Janeiro.....	Oct. 31.....		226		6	3		4		1	
Munich.....	Oct. 27.....	275,000	154						2	5	
Trieste.....	Oct. 20.....	154,500	65			5				4	
Toronto.....	Nov. 17.....	131,000	16								
Stuttgart.....	Nov. 3.....	125,510	38								
Bremen.....	Oct. 27.....	122,000	30							1	
Havre.....	Nov. 3.....	112,074	58					9			1
Pernambuco.....	Oct. 16.....	110,000	83					1	2	1	
Pernambuco.....	Oct. 23.....	110,000	67			1		1	1		
Pernambuco.....	Oct. 30.....	110,000	69			1		2	1		
Barmen.....	Nov. 3.....	109,000	26							2	
Merida.....	Nov. 12.....	48,121	37								
St. Thomas.....	Nov. 2.....	15,000	4								

*New York, N. Y.*—Dr. Wm. M. Smith, health officer, telegraphs as follows:

United States steamer Boston arrived at this quarantine this morning from Greytown, Port Royal, Jamaica, and Port au Prince; last-named port 16th instant. Passed Assistant Surgeon Lumsden reports four deaths from yellow fever during passage and one case convalescent. Three sick on arrival, including surgeon of Boston.

HEALTH OFFICER'S DEPARTMENT, STATE OF NEW YORK,  
*Quarantine, S. I., November 24, 1888.*

DEAR DOCTOR: I beg leave to report that the United States steamship Boston, Commander Ramsey, arrived at this port this morning from Port au Prince, Hayti, with 356 officers and men, and Surgeon Simon, Frank Thomas and Chas. Mitchell, seamen, sick on board. John J. Kelly, apprentice, died November 20; F. J. Thrapp, apprentice, died on the same day; John Ulzimeir, marine, died November 21, and John Retzel, marine, died the 22d instant.

The history of those who died, as also of Albert Lassiter, seaman, who is convalescent, afford conclusive evidence that they were cases of yellow fever.

Frank Thomas and Charles Mitchell are now suffering with that disease, and Surgeon Simon from a complication of diseases, of which

congestion of the kidneys is the chief. There is little prospect of the surgeon's recovery.

The Boston arrived at Port au Prince November 4th and sailed for this port November 16th. The diseases undoubtedly originated from exposure at Port au Prince, in what manner and under what circumstances it is difficult to determine, as Commander Ramsey seems to have employed every necessary precaution against exposure to infection of yellow fever or other diseases peculiar to the climate of the tropics.

Very respectfully,

WM. M. SMITH,  
*Health Officer.*

J. B. HAMILTON, M. D.,  
*Surgeon-General.*

*Buffalo, N. Y.*—November 24, 1888, P. A. Surgeon W. A. Wheeler reports as follows:

A seaman from the steamer W. H. Gratwick yesterday presented himself at this office for treatment. He was suffering from varioloid. Notice was at once sent to the health authorities, and they removed him to the city pest-house. This office was fumigated, also the steamer Gratwick and the carriage in which the man was removed.

*St. Louis, Mo.*—Four cases small-pox are reported for the week ended November 17.

*Tampa, Fla.*—November 21, 1888: Dr. J. P. Wall, president board of health, writes as follows:

SIR: It affords me much gratification to be able to report that no new cases of yellow fever have occurred for the week ending to-day. In fact, there have been no new cases since the 12th instant, and no deaths. There are 4 cases not yet fully recovered under treatment—3 of these were taken sick as early as the 6th of November, the more recent one on the 12th instant. This latter is my patient, and still has albuminous urine with icteric conjunctivæ, not much yellowness of skin. I saw all the local physicians to-day and made personal inquiries as to new cases, none having been reported.

I am endeavoring to get the regulations of the local quarantines along the railroad between here and Jacksonville so modified as to permit through travel and traffic from south Florida to New York and other northern points. I am still trying to keep the unacclimated out of Tampa, and consequently am only desirous of getting through travel and traffic re-established. In the event I succeed with the local quarantines I hope that you will allow passengers from south Florida to pass Camp Perry without detention.

There seems to be some sickness about Braidentown, on the Manatee River, but Doctor Harrison informs me that he is not allowed to go there to see about it, the community being hostile to the idea of its being pronounced yellow fever. Last winter it only hibernated at those places where its true character was not recognized, or, if recognized, denied.



*Fernandina, Fla.*—The following is a copy of a communication signed by forty-nine citizens of Fernandina:

FERNANDINA, FLA., November 18, 1888.

GENTLEMEN: We, the undersigned, the citizens of Fernandina, are convinced from personal observation that, at the present time, there is not nor has not been for thirty days any yellow fever existing here, and that our city is suffering serious injury by the reports being published daily in the *Savannah Morning News*. If you will so modify the quarantine regulations, now in force, as to allow those who had the prevailing fever, "and who went away to recuperate" to return, and that vessels can come here to load, business will revive; the F. R. & N. Railroad is anxious to bring in all freight, not only for sail vessels, but for the steamships; our city will again assume her place in the markets of the country, and after a full and complete fumigation by the Government, we can all, with perfect safety, have our wives and families return. In making this appeal we are not governed by any but the broadest motives for our general welfare, and feel sure you will do all in your power to assist us.

To the BOARD OF HEALTH, NASSAU COUNTY.

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Surgeon J. W. Ross, U. S. N., writes as follows:

The physicians report one new case of yellow fever for yesterday, and the same number for the day before.

One of the physicians, Doctor Pope, says there has been no yellow fever here or in Jacksonville this year. The fact is that the fever is on its last legs for want of pabulum in the city proper. It is cropping out in the outskirts however. Two of the sanitary guards have been taken within the last few days, and one of them is a very ill man.

Another guard and his wife are just beginning convalescence. Our cordon is doing very well indeed, better than I had expected.

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FERNANDINA, FLA., November 21, 1888

A careful analysis of the status here for yesterday shows that there were 4 cases of yellow fever under treatment, and 1 new case was reported. This is a decidedly better showing than could have been made at any time since my arrival, especially as regards total number of cases on hand, and I believe that if we can keep unprotected persons from coming the epidemic will soon be over.

We have completed the disinfection, fumigation, &c., at about one-sixth of the houses, and with the energetic force now at work the remaining houses will have been attended to in the course of a month from this date.

The captains of the vessels, whose cases are being kept outside the infected ones, are growling considerably, as such men always growl at everything; but the men themselves, both on Tiger Island and at Fort Clinch, pronounce themselves quite comfortable, and the only man not well amongst the whole lot is a man who has a small tumor which he brought here with him. The board of health and Howard Association both sustain me fully, and we shall have no trouble to hold our own in spite of the agitating returned refugees.

NEW SMYRNA, FLA., *November 9, 1888.*

DEAR SIR: According to, and in compliance with instructions received per telegrams of the 1st, 2d, and 14th of October, I have made a thorough inspection of the towns on this coast from St. Augustine to Titusville inclusive, of which I beg leave to submit the following report:

New Smyrna, the first place inspected, is my home, where I have lived and practiced medicine for the past twenty years. There has been no yellow fever here this season and but a few cases of a mild type of malarial fever. The town is situated on a wide salt-water river, is high, dry, and perfectly drained, and its sanitary condition is perfect.

It is watered by artesian wells which furnish an abundant supply of pure water for all purposes.

The ocean is only a mile and a half distant and there is no fresh water stream emptying into the river anywhere on its course. There are no ponds of stagnant water and no swamps near enough to affect the health of the place.

The next town visited was Port Orange, about 10 miles north of New Smyrna, on the Halifax River. At the time of my visit there was no case of fever in the town, and the practicing physician assured me that there had been none for several weeks. There never has been a case of yellow fever there. Port Orange is situated on low land and the drainage is defective, but the place has always been healthy, malarial fevers being of rare occurrence.

Daytona, the next town northward, is the largest place on the east coast south of St. Augustine. The population is about 2,000. A large part of this town is liable to overflow in wet weather or when the tides are unusually high. A slough or swamp runs through the middle of the town for a distance of about a mile, and as it is but a little above high-water mark, thorough drainage is impossible. After each overflow, especially if it occurs in the summer, there is a visitation of malarial fever, generally of a mild type. At the time of my visit they were just recovering from one of these attacks. There had been a great many cases, but no deaths. One physician reported the fever as dengue, but the mayor of the town, who is a practicing physician and a member of the county board of health, pronounced it as malarial fever. I saw no case upon which I could make a positive diagnosis.

There was no yellow fever present and evidently had not been any in the place during the past summer.

Daytona is unusually free from billious fevers of a malignant type. Artesian wells furnish an abundant supply of good water here as elsewhere on this coast. The town is clean and in good sanitary condition, except the swamp already mentioned, and the authorities are doing all that is possible to remedy that.

Ormond, situated 5 miles north of Daytona, is high and dry.

There was no case of fever in town at the time of my visit. The sanitary condition of the town is excellent.

Titusville, the next place visited, is situated upon a salt water bay or lagoon, generally known as Indian River, about 6 miles wide.

The bluff upon which the town is built is high and the drainage good.

There has been no case of yellow fever here this season.

An artesian well is being bored at this time and has reached a depth of 700 feet. A full flow of very salt water is the only result so far.

Titusville has a great reputation as a health resort, and is very free from malarial fever.

At St. Augustine, the next place visited, I found that there had been a great many cases of the same sort of fever reported at Daytona as dengue, but all were convalescent.

There had been no deaths from fever and I saw nothing which justified a suspicion that there had been a case of yellow fever during this season.

I went there quietly and unannounced, being well acquainted with the place and many of the oldest inhabitants. I walked alone from house to house, and I think I saw every case of fever in the city before I applied to the board of health or the town authorities for information. I found those gentlemen very kind and obliging, especially Mayor Greenough and Doctor Rainey, and am under many obligations to them for courtesies extended during my stay.

The organization of the board of health, the system of sanitation and their quarantine regulations are perfect. It seems to me impossible for any person from an infected town to enter St. Augustine.

Quarantine regulations at all of the towns on the coast are very stringent.

All seem to be keenly alive to the necessity of keeping out the plague, and as it has not yet made its appearance I think they will succeed in doing so.

While I was at St. Augustine yellow fever was reported at Enterprise.

Doctor Hartigan's report upon its origin is undoubtedly correct.

There was no yellow fever there until announced by him. I visited that place frequently during the summer on business and saw some cases of malarial fever, but no yellow fever.

The weather is unusually warm and damp for the season, and unless there is a change soon, the fever is likely to hibernate at Enterprise, where the conditions are peculiarly favorable for it.

Malarial fever has existed there, winter and summer for the past two years, and yellow fever may become acclimatized if the sanitary condition of the place is not improved.

Very respectfully, your obedient servant,

B. F. FOX, M. D.

Gen. JOHN B. HAMILTON,

*Surgeon General Marine-Hospital Service, Washington, D. C.*

*Jacksonville, Fla.*—(No. 48).—An ordinance to provide for the health of the inhabitants of the city of Jacksonville:

Whereas, Yellow fever is epidemic in this city, and

Whereas, By section 4 of article 3 of the act of the legislature of Florida, approved May 31, 1887, the city council is authorized to make regulations to secure the general health of the inhabitants, and to prevent and remove nuisances, and for other purposes; therefore,

Be it ordained by the city council of the city of Jacksonville:

SECTION 1. That it shall be unlawful for any person to conceal, to remove, or to refuse to give up to the authorities hereinafter mentioned, upon demand any article in any house owned or occupied by

such person, or in his possession or control, which shall be declared to be infected by yellow fever by the board of health of the county of Duval, the city health officer, or by any officer of the United States Government, cooperating with the said board of health, or with the city health officer, or with this council.

SEC. 2. That within ten days from the date of publication of this ordinance every person, having in his possession or control any article so declared to be infected, shall report and surrender or deliver the same to surgeon in charge of United States Government relief measures in this city, or his agent, and in case any such article is by said officer or his successor directed to be destroyed by fire, the said article shall be appraised by such board of appraisers as shall be appointed by agreement by such committee as shall be thereto authorized by resolution of this council, and the said officer representing the United States Government, and payment for the same shall be made by the Government of the United States, at the appraised value; or at the option of the said surgeon in charge, or his agent, be replaced at the expense of said Government by similar articles equally as good.

SEC. 3. All bedding, pillows, bed-clothing, and other articles which shall be declared by the health authorities named in section 1 of this ordinance, to be infected and liable to communicate disease, are hereby declared to be nuisances, and such officer or officers as may be designated by the city council are hereby authorized to seize and condemn the same to be either disinfected or destroyed as may be directed by said surgeon in charge of the United States Government relief measures; and any person or persons in possession, or having control of any article after it has been so declared to be infected, and neglecting or refusing to deliver up the same as required herein, shall, on conviction thereof, before the municipal court, be fined not exceeding \$500, or imprisoned not exceeding three months. The owner of articles so seized and condemned shall be paid for the same by the United States Government, or the same shall be replaced under regulations published by the Surgeon-General, United States Marine-Hospital Service.

SEC. 4. Any person wilfully concealing any article suspected, or known, or declared to be infected, shall, upon each and every conviction thereof, be fined not less than \$50 nor more than \$500, or be imprisoned for a period not less than thirty days, nor more than three months, at the discretion of the court.

SEC. 5. It is further declared to be unlawful for any person to carry or transport through or upon any street of the city, or cause to be removed from house to house in the city any infected articles, without first obtaining a permit for such transportation or removal from the county board of health of Duval County, the city health officer or the surgeon in charge of Government relief measures.

In houses where yellow fever has appeared at any time within a period of six months, or in which it shall hereafter appear, articles therein requiring to be disinfected shall, by the owner or person in possession thereof be delivered to the officer in charge of the Government disinfecting establishment, or his representative, and after being disinfected shall be returned.

Any person violating any of the provisions of this ordinance not herein otherwise provided for shall, upon conviction thereof, be fined



not exceeding \$500, or imprisoned not exceeding three months, at the discretion of the court.

Passed November 23, 1888. Approved November 23, 1888.

D. T. GEROW,  
*Acting Mayor.*

A true copy.

[SEAL.] Attest: E. HIGGINS, *Recorder*,  
By WM. C. WEST, *Deputy*.

*Camp Perry, Fla.*—Surgeon W. H. H. Hutton telegraphs as follows:

November 24: "Morning report: Present, officers, 5; guards, 5; Refugees arrived, 1; discharged, 8; remaining, 68. Fever camp, none."

November 26: "Morning report: Present, officers, 4; guards, 5; employés, 28. Refugees arrived, 1; discharged, 6; remaining, 64. Fever camp, none. Heavy frost this morning."

November 27: "Morning report: Present, officers, 4; guards, 5; employés, 28. Refugees arrived, 2; discharged, 24; remaining, 42. Two cases yellow fever discovered yesterday afternoon at Mellenville, half mile east of Sandford. Twenty persons exposed. Place well guarded and all needed precautions are being taken. Heavy frost this morning."

November 28: "Morning report: Present, officers, 4; guards, 5; employés, 28. Refugees arrived, 5; discharged, none; remaining, 47."

November 29: "Morning report: Present, officers, 4; guards, 5; employés, 28. Refugees arrived, 4; discharged, 13; remaining, 38."

November 30: "Morning report: Present, officers, 4; guards, 5; employés, 28. Refugees arrived, none; discharged, 4; remaining, 34. Frost this morning."

*Jacksonville, Fla.*—Dr. Jos. Y. Porter telegraphs as follows:

November 23: "New cases, 6; deaths, 2. Total cases, 4,665; deaths, 407. Patients, St. Luke's, 12."

November 24: "New cases, 9; deaths, none. Total cases, 4,674; deaths, 407. Patients, St. Luke's, 10."

November 25: "New cases, 1; deaths, 1. Total cases, 4,675; deaths, 408. Patients, St. Luke's, 7."

November 26: "New cases, 2; deaths, none. Total cases, 4,667; deaths, 408. Patients, St. Luke's, 7."

November 30: "New cases, 5; deaths, none. Total cases, 4,692; deaths, 408. Patients, St. Luke's, 3."

*Gainesville, Fla.*—Assistant Surgeon Martin telegraphs as follows:

November 23: "Four new cases; 2 white, 2 colored. One death, white."

November 24: "Two new cases; colored."



November 25: "No new cases. Refugees returning against my positive orders and protests. City authorities seem powerless to prevent them. Only 3 members of City Council and 1 of Board of Health here."

November 26: "Three new cases; 1 death, colored. Deceased had been sick since the 18th. Discovered to-day dying. Heavy frost and eighth-inch ice last night.

November 27: "One new case, white."

November 29: "No new cases; no deaths."

November 30: "No new cases; no deaths. Heavy frost last night."

*Palmetto, Fla.*—Inspector M. B. Harrison telegraphs as follows:

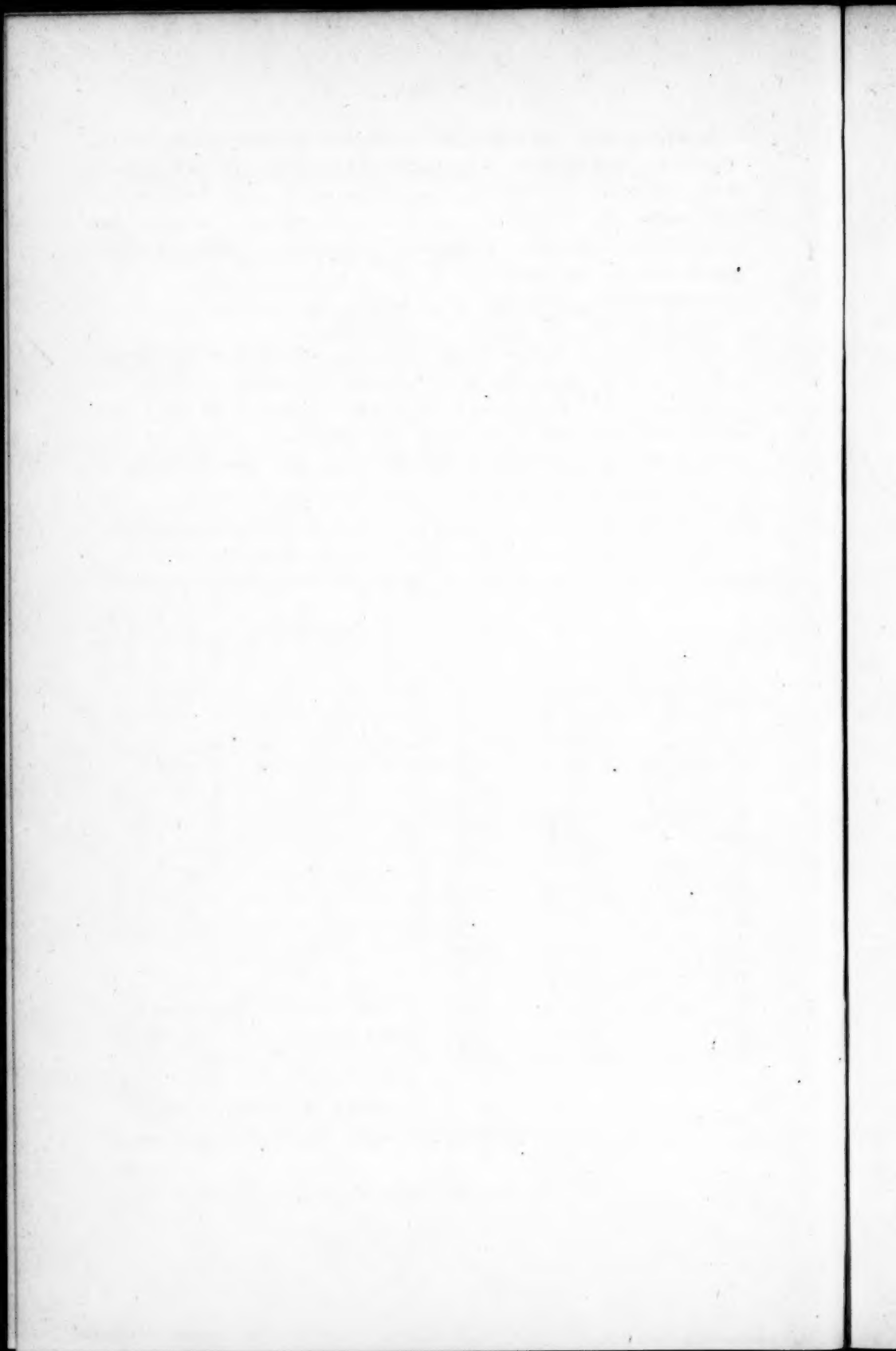
November 27: "For week 6 p. m. Monday, November 25, there were, at Palmetto, new cases yellow fever, none; deaths, 1. Total number of cases to date, 85; total number of deaths, 11. Last case on 19th."

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Nov. 24	1,544,268	621						7	26	27	7	11
St. Louis, Mo.	Nov. 17	440,000	150						1		10		1
St. Louis, Mo.	Nov. 24	440,000	141						3		11		
Baltimore, Md.	Nov. 24	431,879	131						6	1	6		2
San Francisco, Cal.	Nov. 16	330,000	114						5		5		1
Cincinnati, Ohio.	Nov. 24	255,137	84						3	1	2		
New Orleans, La.	Nov. 17	248,000	119										
Cleveland, Ohio.	Oct. 27	227,861	65						5	2	5	1	
Cleveland, Ohio.	Nov. 3	227,861	52						3		7		
Kansas City, Mo.	Nov. 17	180,000	42						2		1		
Kansas City, Mo.	Nov. 24	180,000	42						1				1
Newark, N. J.	Nov. 20	176,000	62						1				
Rochester, N. Y.	Nov. 24	120,000	26								4		
Columbus, Ohio.	Nov. 24	101,885	20						3		1		
Richmond, Va.	Nov. 19		36								1		
Richmond, Va.	Nov. 26		34								1		
Denver, Colo.	Nov. 23	96,000	27						2				
Toledo, Ohio.	Nov. 23	80,000	11							1	1		
Nashville, Tenn.	Nov. 24	65,153	19										
Fall River, Mass.	Nov. 24	65,000	22										
Savannah, Ga.	Nov. 16	52,827	18								1		
Lynn, Mass.	Nov. 24	50,000	12						1				
Manchester, N. H.	Nov. 17	41,000	14						1		1		
Portland, Me.	Nov. 24	40,000	10										
Galveston, Tex.	Nov. 16	40,000	17										
Mew Albany, Ind.	Nov. 24	30,000	3										
Auburn, N. Y.	Nov. 24	26,000	6						1				
Haverhill, Mass.	Nov. 24	25,000	9										
Newton, Mass.	Nov. 24	21,105	5										
Newport, R. I.	Nov. 22	20,466	6						1		1		

JOHN B. HAMILTON,

*Supervising Surgeon-General, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract  
          { No. 49. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., December 7, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended December 7, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended November 17 corresponded to an annual rate of 19.7 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 12.6, and the highest in Cardiff, viz., 29.3 a thousand. Diphtheria caused 5 deaths in Salford, 4 in Manchester, 4 in Nottingham, and 2 in Birmingham. Small-pox caused 1 death in Cardiff.

*London.*—One thousand six hundred and nineteen deaths were registered during the week, including measles, 124; scarlet fever, 31; diphtheria, 44; whooping-cough, 17; enteric fever, 15; diarrhoea and dysentery, 16. The deaths from all causes corresponded to an annual rate of 19.7 a thousand. Diseases of the respiratory organs caused 374 deaths, and 3 cases of suicide were registered. In greater London 2,028 deaths were registered, corresponding to an annual rate of 19.1 a thousand of the population. In the "outer ring" the deaths included measles, 12; scarlet fever, 4; diphtheria, 7.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended November 17 in the 16 principal town districts of Ireland was 21.8 a thousand of the population. The lowest rate was recorded in Lurgan, viz., 0.0, and the highest in Lisburn, viz., 33.8 a thousand. In Dublin 159 deaths were registered, including measles, 5; diarrhoea, 5; whooping-cough, 6; enteric fever, 1; scarlet fever, 1; typhus, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week ended November 17, corresponded to an annual rate of 19.1 a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Edinburgh, viz., 15.0, and the highest in Paisley, viz., 37.9 a thousand. The aggregate number of deaths registered from all causes was 484, including measles, 24; scarlet fever, 8; diphtheria, 11; whooping-cough, 4; fever, 6, and diarrhœa, 10.

*Denmark.*—The United States minister under date of November 7, 1888, transmits a translation of a quarantine order issued by the Danish Government, dated November 2, 1888, of which the following is an extract:

\*            \*            \*            \*            \*            \*

The provisions of section 2, paragraph 1, of the law of July 2, 1880, referring to precautionary measures against the introduction of contagious diseases into the kingdom, are hereafter to be enforced in reference to the following places:

Marseilles; Sicilian harbors; ports of the French coast between Nantes and St. Malo, both inclusive; Egersund; all ports in Chili; all ports in Florida; all ports in Jamaica; all ports in Martinique; all ports in Guadeloupe; St. Jago de Cuba; ports in East India, Tonkin, and Cochin China; Trieste; all ports in Egypt; all ports in the Red Sea; Rio de Janeiro and Havana.

The prohibition against the importation into the kingdom of used linen, used articles of clothing, and used bed-clothes, provided the articles named do not constitute the personal effects of travelers; waste cotton or wool, refuse paper, hair and hides, remains in force in reference to the following places:

Marseilles; Sicilian harbors; ports of the French coast between Nantes and St. Malo, both inclusive; Egersund; all ports in Florida; all ports in Jamaica; all ports in Guadeloupe; St. Jago de Cuba; all ports in East India, Tonkin, and Cochin China, and all ports in Chili.

The prohibition against the importation into the kingdom of used linen, used articles of clothing, and used bed-clothes, providing the articles named do not constitute the personal effects of travelers, remains in force in reference to Rio de Janeiro and Havana. In addition thereto, special attention is to be paid to the cleansing under official inspection of linen, clothing, and bed-clothes, brought from either of the last two places as the personal effects of travelers.

This order to go into effect at once.

*Malta and Gozo.*—Two hundred and twenty-two deaths were registered during the period from the 16th to the 31st of October, 1888; in-

cluding measles, 1; whooping-cough, 3; enteric fever, 3; and dysentery, 3.

*Montevideo, Uruguay.*—Four hundred and eighteen deaths were registered during the month of September, 1888, including small-pox, 25, and typhus and typhoid fever, 9. The sanitary condition of the city was good.

*Gibraltar.*—The Board of Health, at a meeting held November 15, 1888, declared the Canary Islands as infected places under the provisions of the "Quarantine order in Council, Gibraltar, 1886," and imposed a quarantine of 14 days on all arrivals thence.

*Havana, Cuba.*—Thirteen deaths from yellow fever are reported for the week ended November 23, 1888.

*Cardenas, Cuba.*—Good health is reported in town and harbor, November 23, 1888.

*Guaymas, Mexico.*—The United States consul under date of October 31, states that "there is no particular or epidemic sickness in this consular district. Sanitary condition good."

*Nassau, N. P.*—The United States consul reports under date of November 24, 1888: "City is very healthy. Weather dry and pleasant."

*Georgetown, Demerara.*—The United States consul reports that "the bills of health issued during the month of October were all entirely clean except three, which were slightly qualified by the insertion of the word 'epidemic' before 'yellow fever' in the paragraph relating to the health of the colony in general. This was on account of the existence of four sporadic cases of that disease. These having entirely disappeared, the subsequent issues have been 'clean' without any qualification."

*Cartagena, United States of Columbia.*—The United States consul reports as follows:

November 3: "Beri Beri, a new disease here, is being carried to all ports from Colon and Panama."

November 10: "But 1 death from Beri Beri last week."

November 17: "Only 1 case of Beri Beri. Two much-needed rains have fallen."



## MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
Paris.....	Nov. 10.....	2 260,945	956	.....	.....	4	17	.....	30	24	5
Paris.....	Nov. 17.....	2 260,945	873	.....	.....	6	11	1	28	13	2
Glasgow.....	Nov. 10.....	545,678	226	.....	.....	.....	3	9	3	.....	.....
Glasgow.....	Nov. 17.....	545,678	185	.....	.....	.....	1	6	6	.....	.....
Warsaw.....	Nov. 3.....	444,814	235	.....	.....	8	.....	18	11	.....	.....
Warsaw.....	Nov. 10.....	444,814	213	.....	.....	7	.....	18	9	.....	.....
Calcutta.....	Sept. 29.....	433,219	227	29	.....	.....	.....	.....	.....	.....	.....
Rome.....	Sept. 29.....	391,188	136	.....	.....	.....	6	1	3	.....	.....
Rome.....	Oct. 6.....	393,496	166	.....	1	.....	8	1	3	.....	.....
Amsterdam.....	Nov. 10.....	389,916	127	.....	.....	.....	.....	.....	2	.....	.....
Amsterdam.....	Nov. 17.....	389,916	160	.....	.....	.....	1	1	5	.....	.....
Rio de Janeiro.....	Oct. 21.....	350,000	188	.....	1	3	2	.....	.....	.....	.....
Rio de Janeiro.....	Nov. 4.....	300,000	210	.....	7	3	1	3	2	.....	.....
Copenhagen.....	Nov. 6.....	300,000	115	.....	.....	.....	.....	1	5	.....	.....
Copenhagen.....	Nov. 13.....	300,000	111	.....	.....	.....	1	2	.....	.....	.....
Munich.....	Nov. 3.....	275,000	142	.....	.....	.....	.....	3	11	.....	.....
Munich.....	Nov. 10.....	275,000	125	.....	.....	.....	.....	1	3	.....	.....
Edinburgh.....	Oct. 27.....	262,733	81	.....	.....	.....	.....	.....	2	.....	.....
Palermo.....	Nov. 10.....	250,000	81	.....	2	.....	.....	.....	2	.....	.....
Palermo.....	Nov. 17.....	250,000	66	.....	3	.....	.....	2	5	.....	.....
Belfast.....	Nov. 17.....	227,022	96	.....	.....	.....	1	1	1	.....	.....
Bristol.....	Nov. 10.....	226,510	81	.....	.....	.....	.....	.....	1	.....	.....
Bristol.....	Nov. 17.....	226,510	61	.....	.....	.....	.....	.....	.....	.....	.....
Genoa.....	Nov. 10.....	179,851	94	.....	3	1	.....	.....	1	.....	.....
Genoa.....	Nov. 17.....	179,851	71	.....	3	.....	3	.....	1	.....	.....
Trieste.....	Nov. 3.....	154,500	77	.....	1	.....	1	1	3	.....	.....
Trieste.....	Nov. 10.....	154,500	84	.....	10	.....	.....	.....	1	.....	.....
Toronto.....	Nov. 24.....	130,000	17	.....	.....	.....	.....	.....	.....	.....	.....
Stuttgart.....	Nov. 10.....	125,510	36	.....	.....	.....	.....	.....	1	.....	.....
Stuttgart.....	Nov. 17.....	125,510	27	.....	.....	.....	.....	.....	.....	.....	.....
Bremen.....	Nov. 3.....	122,000	39	.....	.....	.....	.....	.....	1	.....	.....
Bremen.....	Nov. 10.....	122,000	25	.....	.....	.....	.....	.....	1	.....	1
Havre.....	Nov. 10.....	112,074	64	.....	1	.....	7	.....	.....	.....	.....
Havre.....	Nov. 17.....	112,074	53	.....	1	.....	2	.....	.....	.....	.....
Barmen.....	Nov. 10.....	109,000	21	.....	.....	.....	.....	.....	.....	.....	.....
Leghorn.....	Nov. 11.....	102,540	38	.....	.....	.....	.....	.....	.....	.....	.....
Leghorn.....	Nov. 18.....	102,540	35	.....	.....	.....	.....	.....	.....	.....	.....
Leith.....	Oct. 27.....	74,320	14	.....	.....	.....	.....	.....	.....	.....	.....
Cadiz.....	Nov. 17.....	65,028	54	.....	.....	.....	.....	.....	.....	.....	.....
Curacao.....	Nov. 17.....	25,000	5	.....	.....	.....	.....	.....	.....	.....	.....
Vera Cruz.....	Nov. 22.....	23,800	28	.....	.....	.....	.....	.....	.....	.....	.....
Gibraltar.....	Nov. 11.....	23,631	11	.....	.....	.....	.....	.....	.....	.....	.....
Kingston, Can.....	Nov. 23.....	17,300	1	.....	.....	.....	.....	.....	.....	.....	.....
Bermuda.....	Nov. 27.....	15,260	.....	.....	.....	.....	.....	1	.....	.....	.....
Cartagena, Colombia.....	Nov. 17.....	13,000	11	.....	.....	.....	.....	.....	.....	.....	.....
Laguayra.....	Nov. 10.....	7,428	11	.....	.....	.....	.....	.....	.....	.....	.....
San Juan del Norte.....	Nov. 12.....	1,004	0	.....	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

The following letter of Dr. John C. L'Engle, chairman of the committee of the Jacksonville auxiliary sanitary association on sanitary work, explaining the nature of the work performed, is published as a matter of general interest :

JACKSONVILLE, FLA., *November 13, 1888.*

DEAR SIR: Referring to your letter in regard to the expenditure of the sanitary department of the Jacksonville auxiliary sanitary association, I would say that the work that has been done consists in ditching and draining overflowed lands contiguous to habitations where

yellow fever has occurred, putting in box-drains (tiling could not be had), removing fecal matter where, in wet places, it could not be covered up without impregnating the soil.

By referring to the topography of this city, you will notice that it is situated on the north bank of the St. John's River, the river turning at right angles and passing to the east of a portion of the city recently added to the corporation; that this tract of country is low and flat, much of the land being marshy; that we have a creek on the west passing partially around to the northwest; another on the east extending to the northwest. This country lying between these two creeks is low and flat, and has never been thoroughly drained, and the water, in some places for acres, could be found a foot deep, with plank-walks through the yards and to the out-houses, and with wells containing only surface water or drainage from the seeping. The marshes and low lands along the sides of these creeks also emitted miasmatic stench deleterious to health, or supposed to be, and all demanding attention. The area of fever has been five miles from east to west, and ten miles from north to south, and the outlying district, where this condition existed, is inhabited by the lower classes, principally negroes, who have had a large share of fever and are now having it. This country demands attention, and the principal expenditures have been made in these places, where the owners and inhabitants have been unable, pecuniarily in the past, to do the necessary work for sanitation, and includes an area which has been annexed to the city of Jacksonville during the last meeting of the State legislature, the act going into operation on the first of January last. In this district, four times the previous size of the city, the existing municipalities were disorganized and the government of the country assumed by the city authorities of the city of Jacksonville.

The city appointed a health officer, inspectors, and a sanitary force, but, unfortunately, they did not realize the magnitude of the undertaking, or the area of the new city. Hence, much was left undone that should have been, and now must be done, to insure reasonable health. That the appearances of the surrounding country have been improved is natural, and, in fact, could not be otherwise, as, in order to obtain the sand or earth necessary to fill in low places, hills and slopes must be graded, and while this grading is being done, necessary for the sand wanted, care is taken to do the whole work under the supervision of a competent civil engineer, and that portion of the work which is of a public nature is charged to the proper account for public improvements.

I take pleasure in referring you to the most excellent article by Gen. B. F. Butler in the November number of the North American Review, on this subject of sanitary work done by him in New Orleans, and beg to say that I believe this the most direct and feasible means of avoiding the recurrence of yellow fever, and beg to say that though the expenditures made are apparently large, they have been necessary, and that much more remains to be done, and must be done, before reasonable safety can be felt.

Respectfully,

JNO. C. L'ENGLE,  
*Chairman Sanitary Committee.*

DR. JOSEPH Y. PORTER,  
*Surgeon-in-Charge Government Relief Measures, City.*

*Callahan, Fla.*.—Dr. J. L. Posey reported as follows in regard to his inspection of this place :

CAMP PERRY, FLA., *November 20, 1888.*

SIR : In pursuance of several orders issued by Surg. W. H. H. Hutton, I have inspected Callahan, Fla., a small town situated in Nassau County, 20 miles north of Jacksonville, and 20 miles south of Camp Perry. The lines of the Florida Railway and Navigation Company, and the Savannah, Florida and Western Railroads intersect at this point, and passengers and baggage are transferred for Jacksonville or Fernandina, thus rendering this place liable to the introduction of yellow fever from both cities where the disease has been epidemic. The site of the town is low and marshy, plainly indicating that the various types of malarial fever must be very common there; the correctness of this opinion being amply confirmed by the appearance and experience of the resident population. At the time of my first visit, about the 30th of September, there remained only a few whites; the greater part of the population had taken flight in anticipation of the occurrence of the disease in their midst. The first case was that of John Upchurch (white), who, in company with other young men of the neighborhood, left Callahan on the 6th of September for Fernandina to take part in quelling the labor-strike existing there. He returned with his companions on the 9th of September, and was taken sick the following day with all the symptoms of yellow fever of a mild type. The history of his case was given me by himself and a competent nurse, and at the time I saw him he presented the appearance of a convalescent from this disease. On or about the 26th of September his brother, George Upchurch, who had not visited Fernandina or any known infected point, and who had nursed his brother John during his illness, was taken suddenly sick with chill, intense cephalalgia, pain in the back, and high fever. I saw this case on 30th of September and October 1 in company with his medical attendant, Doctor Pope, of Fernandina. This was one of the most severe and typical cases of yellow fever I have seen during my inspections of infected Florida towns. His condition was indeed a critical one at the time of my two visits. He had already vomited large quantities of "coffee-grounds" fluid, an active delirium alternating with a comatose condition, retention of urine, which, upon test, showed 10 per cent. of albumen; subsultus tendinum, eyes deeply injected and icteric; the brow and neck of a dark-yellow color, and face a dusky-red hue; in fact, all the symptoms of this disease in their most formidable array. Under the most careful treatment and excellent nursing he recovered, and spent three days of his convalescence at Camp Perry, where he rapidly gained his strength. I also saw, accompanied by Doctor Pope, Mr. R. T. Richard, who had been taken sick on the 30th of September, and who had repeatedly visited the rooms occupied by the Upchurch brothers, and had helped to nurse them during their sickness. He presented all the symptoms of yellow fever, but in a milder form, and was convalescent on the twelfth day of his attack. Other cases occurred, among them young Matthews, a son of the hotel-keeper, where the guards slept on their return from Fernandina, and where Richard and Parker were taken sick. The cases of Matthews and Parker (whites) were treated at the Camp Perry fever-hospital, as also several cases of colored people living near the town, among the latter that of a negro man who nursed the Upchurch brothers, whose case was one of great severity.

Since the occurrence of these cases I have revisited Callahan, and burned all infected bedding, thoroughly fumigated the houses where these cases were found, and disinfected the premises. There are not at present, and there have not been within the last three weeks, any other cases of yellow fever, and I consider the town as free from infection as complete and thorough sanitary measures can render it.

Respectfully submitted,

J. L. POSEY, M. D.,  
U. S. Sanitary Inspector.

To the SUPERVISING SURGEON-GENERAL,  
*United States Marine-Hospital Service, Washington, D. C.*

*Tampa, Fla.*—Dr. J. P. Wall, president board of health, reports as follows:

November 28: For the week ending to-day there have occurred two new cases of yellow fever, both taken sick Sunday morning.

One is a young lady who arrived here from Scotland on the 22d ultimo, and the other is a man from New Jersey, who has been here a few weeks. These are the only cases since the 12th instant.

I had a house-to-house inspection made in Tampa the first three days of the week, but failed to discover any cases of yellow fever. We had a light frost here Monday morning, the 26th, and the weather has been cooler and more pleasant.

November 30: One of the new cases reported on the 28th instant, of yellow fever, died yesterday afternoon, on the fifth day of illness.

This death occurred in the case of the gentleman recently from New Jersey. I learn that he arrived here on the 16th instant. The other case is of mild type, no nephritic trouble, and is improving. No other new cases.

This makes 10 deaths from yellow fever since the 7th of August. Weather cool.

*Charleston, S. C.*—The acting city registrar telegraphs as follows:

December 1: "Quarantine restrictions were removed on November 28."

*Jacksonville, Fla.*—Dr. Jos. Y. Porter telegraphs as follows:

December 1: "New cases, 5; deaths, 2; total cases, 4,697; deaths, 410. Patients, St. Luke's, 3."

December 2: "New cases, 2; deaths, none; total cases, 4,699; deaths, 410. Patients, St. Luke's, 3."

December 3: "New cases, none; death, 1; total cases, 4,699; deaths, 411. Patient, St. Luke's, 1. Disinfection commenced to-day. Ninety-eight houses treated."

December 4: "New cases, 1; deaths, none; total cases, 4,700; deaths, 411. Patients, St. Luke's, 1. Houses fumigated, 71."

December 5: "New cases, 4; death, 1; total cases, 4,704; deaths, 412. Patients, St. Luke's, 1. Houses fumigated, 93, and 81 inspected."

December 6: "Board of health reports: New cases, none; deaths, none; total cases, 4,704; deaths, 412. Patients, St. Luke's, 1. Houses umigated, 205; houses inspected, 245."

*Camp Perry, Fla.*—Surgeon W. H. H. Hutton telegraphs as follows:

December 1: "Morning report: Present, officers, 4; guards and employés, 7. Refugees discharged, 34; remaining, none. Camp officially closed."

*Gainesville, Fla.*—Assistant Surgeon Martin, U. S. N., telegraphs as follows:

December 1: "No new cases; no deaths. Dr. Posey will commence fumigation Monday."

December 2: "One death, colored; no new cases. Discontinued all relief measures last night."

December 3: "No new cases; no deaths."

December 4: "No new cases. The last case discharged to-day."

*Palmetto, Fla.*—Dr. M. B. Harrison telegraphs as follows:

December 4: "For week ending 6 p. m., December 3, there were at Palmetto, Fla., new cases yellow fever, none; deaths, none. Total number cases to date, 85."

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—										
				Cholera.	Yellow fever.	Small-pox.	Variceloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Dec. 1.	1,545,140	691							6	25	41	12	9
Philadelphia, Pa.	Nov. 24.	1,016,758	345							9	11		1	2
Brooklyn, N. Y.	Nov. 24.	805,885	295							6	2	22		6
Chicago, Ill.	Dec. 1.	800,000	245							14	4	20	5	2
Baltimore, Md.	Dec. 1.	431,879	167							6	5		1	1
San Francisco, Cal.	Nov. 23.	330,000	123							4				2
Cincinnati, Ohio.	Dec. 1.	255,137	116							5	1	12		
New Orleans, La.	Nov. 24.	248,000	114							1		5		
Pittsburgh, Pa.	Nov. 29.	230,000	72							4	2	6	1	2
Cleveland, Ohio.	Nov. 17.	227,861	53							3		3		
Milwaukee, Wis.	Dec. 1.	195,000	55							1	3	3		
Kansas City, Mo.	Dec. 1.	180,000	35									2		
Minneapolis, Minn.	Nov. 24.	180,000	46							3		3		1
Newark, N. J.	Nov. 27.	176,000	57							2		2	2	
Rochester, N. Y.	Dec. 1.	120,000	32									3		
Denver, Colo.	Nov. 30.	96,000	34							2	1	6		
Toledo, Ohio.	Nov. 30.	80,000	21											
Nashville, Tenn.	Dec. 1.	65,153	17							2	1			
Fall River, Mass.	Dec. 1.	65,000	20							1	1			
Charleston, S. C.	Dec. 1.	60,145	42									1		
Lynn, Mass.	Dec. 1.	50,000	10							1		1		
Manchester, N. H.	Nov. 24.	41,000	8							1				
Galveston, Tex.	Nov. 23.	40,000	9											
Portland, Me.	Dec. 1.	40,000	11											
Davenport, Ia.	Nov. 24.	33,715	10											
East Saginaw, Mich.	Dec. 1.	33,000	9										5	
New Albany, Ind.	Dec. 1.	30,000	4										1	
Altoona, Pa.	Nov. 24.	29,546	5							1		1	1	
Auburn, N. Y.	Nov. 29.	26,000	6										1	
Haverhill, Mass.	Dec. 1.	25,000	5											
Keokuk, Ia.	Nov. 24.	16,000	2											
Keokuk, Ia.	Dec. 1.	16,000	3											
Pensacola, Fla.	Nov. 24.	15,000	5											

JOHN B. HAMILTON,

Supervising Surgeon-General, Marine-Hospital Service.



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 50. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE,  
Washington, D. C., December 14, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended December 14, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended November 24 corresponded to an annual rate of 18.2 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Derby, viz., 9.8, and the highest in Blackburn, viz., 28.9 a thousand. Diphtheria caused 3 deaths in Salford, 6 in Manchester, 2 in Newcastle-upon-Tyne. Small-pox caused 1 death in Cardiff.

*London.*—One thousand four hundred and nine deaths were registered during the week, including measles, 133; scarlet fever, 20; diphtheria, 41; whooping-cough, 19; typhus, 1; enteric fever, 15; diarrhoea and dysentery, 18. The deaths from all causes corresponded to an annual rate of 17.2 a thousand. Diseases of the respiratory organs caused 287 deaths, and 6 cases of suicide were registered. In greater London 1,756 deaths were registered, corresponding to an annual rate of 10.6 a thousand of the population. In the "outer ring" the deaths included measles, 29; scarlet fever, 3; diphtheria, 6, and whooping-cough, 4.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended November 24 in the 16 principal town districts of Ireland was 22.5 a thousand of the population. The lowest rate was recorded in Lurgan, viz., 5.1, and the highest in Sligo, viz., 38.5 a thousand. In Dublin 175 deaths were registered, including measles, 2; diarrhoea, 1; whooping-cough, 3; enteric fever, 5; scarlet fever, 1; erysipelas, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week ended November 24, corresponded to an annual rate of 17.8 a thousand of the population, which is estimated at 1,314,274. The lowest mortality

was recorded in Edinburgh, viz., 14.1, and the highest in Paisley, viz., 27.0 a thousand. The aggregate number of deaths registered from all causes was 449, including measles, 19; scarlet fever, 6; diphtheria, 9; whooping-cough, 9; fever, 4, and diarrhoea, 6.

*Netherlands.*—The deaths registered in the principal cities of the Netherlands, having an aggregate population of 1,129,774, during the month of September, 1888, corresponded to an annual death rate of 21.5. The lowest rate was recorded in Groningen, viz., 17; and the highest in Hertogenbosh, 29.9. The total number of deaths from all causes was 1,953, including scarlet fever, 3; measles, 7; typhus and enteric fever, 10; whooping-cough, 45; diarrhoea and dysentery, 28, and simple cholera, 6.

*Martinique.*—The United States Consul reports by cable, under date of December 5, 1888, that yellow fever has appeared at Martinique.

*Catania, Italy.*—One hundred and seventy-four deaths were registered during the month of September, 1888, including small-pox, 134; enteric fever, 7.

During the month of October there were 188 deaths registered, including small-pox, 153, and enteric fever, 4.

*Ceara, Brazil.*—Eighty-two deaths were registered during the month of October, 1888.

The United States Consul states that "the town is clean, but depends upon natural drainage; the entire province is suffering from a protracted drought, and the famine-stricken are crowding into this city, and succumb to any kind of disease."

*Barbadoes, W. I.,* November 24, 1888.—The health of the island is good. There is no system of registration, and particulars are unobtainable. The population is estimated at 180,000.

*Cardenas, Cuba,* November 29, 1888.—Cool and dry weather prevails. Health of town good, excepting a few cases of small-pox.

*Havana, Cuba.*—Eight deaths from yellow fever were registered during the week ended November 30, 1888.

*Bordeaux, France.*—Five hundred and forty-four deaths were registered during the month of October, 1888, including enteric fever, 16; scarlet fever, 1; and diphtheria, 9.

*Nassau, N. P.,* November 17, 1888.—City healthy. Strict quarantine against Florida and Cuba. The number of deaths is never reported.

*Bahia, Brazil.*—The United States Vice-Consul, in his dispatch dated November 22, 1888, says: "The sanitary condition of this city and the adjacent country is good, and without any suspicion of plague, cholera, or contagious disease whatever."

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated popula- tion.	Total deaths from all causes.	Deaths from—								
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping- cough.
Glasgow.....	Nov. 24....	545,678	175	.....	.....	.....	.....	1	.....	6	.....	.....
Warsaw.....	Nov. 17....	444,814	268	.....	.....	8	.....	21	.....	19	.....	.....
Calcutta.....	Oct. 6.....	433,219	218	39	.....	.....	.....	.....	.....	2	.....	.....
Calcutta.....	Oct. 13....	433,219	238	41	.....	.....	.....	.....	.....	.....	.....	.....
Calcutta.....	Oct. 20....	433,219	236	39	.....	.....	.....	.....	.....	.....	.....	.....
Rome.....	Oct. 13....	393,496	153	.....	.....	.....	.....	8	.....	3	.....	.....
Amsterdam.....	Nov. 24....	389,916	121	.....	.....	.....	.....	3	1	1	.....	.....
Copenhagen.....	Nov. 20....	300,000	127	.....	.....	.....	.....	1	6	4	.....	.....
Munich.....	Nov. 17....	275,000	157	.....	.....	.....	.....	.....	1	7	.....	.....
Belfast.....	Nov. 24....	227,022	93	.....	.....	.....	.....	1	.....	2	.....	.....
Genoa.....	Nov. 24....	179,880	97	.....	.....	4	1	.....	.....	.....	.....	.....
Toronto.....	Dec. 1.....	130,000	15	.....	.....	.....	.....	1	.....	.....	.....	.....
Stuttgart.....	Nov. 24....	127,510	43	.....	.....	.....	.....	.....	.....	1	.....	.....
Bremen.....	Nov. 17....	122,000	49	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pernambuco.....	Nov. 6.....	110,000	81	.....	.....	4	4	.....	4	3	1	.....
Barmen.....	Nov. 24....	109,000	36	.....	.....	.....	.....	.....	.....	4	.....	.....
Leghorn.....	Nov. 25....	102,540	46	.....	.....	.....	.....	1	.....	.....	.....	.....
Ceara.....	Nov. 8.....	26,943	28	.....	1	.....	.....	.....	.....	.....	.....	.....
Vera Cruz.....	Nov. 29....	23,800	27	.....	.....	1	.....	.....	.....	.....	.....	.....
Gibraltar.....	Nov. 18....	23,631	8	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kingston, Can.....	Nov. 30....	17,300	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Antigua.....	Nov. 25....	15,847	11	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nassau.....	Nov. 17....	12,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

*Report of Experiments on the use of Phosphorus as a Disinfectant; made at the Laboratory of the United States Marine-Hospital Service at the port of New York.*

SIR: I have the honor to state that in accordance with your instructions, I have made a series of experiments with the fumes of phosphoric pentoxide in view of determining its utility and applicability for disinfection.

As a fact well known in chemistry, when phosphorus is burned in air, phosphoric pentoxide is formed, it being a white amorphous powder, absorbing moisture with the greatest avidity, forming hydrogen phosphate, or phosphoric acid. On igniting phosphorus in a closed space or vessel, the amorphous powder falls in flakes to the bottom of the vessel, the powder never being longer in suspension than forty minutes after combustion is completed, an excess of phosphorus being used in each instance.

For the purpose of experiment, a large wooden cask, 500 litres capacity, was used for exposing microorganisms and various substances to the fumes. At first the phosphorus was placed in the bottom of the cask and ignited, but it was found that the temperature at the top where the microorganisms were placed, was 75° C. By subsequent experiment it was found that this could be overcome by suspending the vessel containing the phosphorus, nearer the top of the cask, and covering all the contiguous surfaces of wood with asbestos board. By this arrangement the temperature of the air at the bottom never reached over 32° C.

*Its effect on litmus.*—1st series: Test-tubes, 1 by 5 inches, having within considerable quantities of alkaline litmus paper in a moist state, were placed in the cask; some were left open, mouths upward, some were placed horizontally, and others suspended mouths downward.

2nd series (four in number) contained moistened litmus paper, covered with 1, 2, 3, and 4 layers of filter paper, respectively.

3rd series, (four in number) covered with 1, 2, 3, and 4 layers of flannel.

4th series, covered with 1, 2, 3, and 4 layers of muslin.

5th series, covered with 1, 2, 3, and 4 layers of thin film of absorbent cotton. The materials used for covering these various test-tubes, were thoroughly dried in an oven before using, and immediately after covering the tubes they were placed in the cask, thus overcoming as far as possible, the amount of moisture that is constantly present in fabrics and preventing absorption of the phosphorus pentoxide by the coverings.

Thirty-five grams of phosphorus was ignited, and the cask hermetically sealed, for 24 hours, then opened. No change was observed in any of the tubes of litmus that were covered. In the series left open, those that were placed in a vertical position, and those lying horizontally, all the paper was acted upon by the phosphoric fumes. In those suspended mouth downwards, very little of the paper had changed color. All the external surfaces were covered with flakes of pentoxide.

The test tubes that were covered were then taken and tested for presence of the acid, to ascertain if any had penetrated the coverings, but in no instance was it found.

As a control-experiment the tubes were placed under a bell-jar, and as soon as all quantity of sulphur dioxide was thrown in, and in less than thirty seconds all the paper had been acted upon by the gas.

In another series of experiments, letters and newspapers having been sealed and perforated after the manner practiced at the fumigating stations in the South, each containing in the middle a piece of litmus paper, were exposed to the fumes for 24 hours.

It was found that the fumes had acted upon the litmus to a very small extent around the perforations; in newspapers, where not perforated, no effect was noticed.

#### MICRO-ORGANISMS.

The microorganisms exposed to the fumes were: Anthrax, cholera Asiaticæ, cholera nostras, bacterium of yellow fever (Finlay), and typhoid.

All the cultivations of the above organisms were made in small flat dishes  $\frac{1}{4}$  inch in depth and 3 inches wide, containing a film of agar-agar  $\frac{1}{16}$  inch in thickness. These were divided into several series, like those of the test tubes—

First series, left open.

Second series, covered with filter paper.

Third series, covered with muslin.

Fourth series, covered with flannel.

Fifth series, covered with film of absorbent cotton.

All were exposed for 24 hours, an excess of phosphorus being used.

On taking cultivations from the casks, all external surfaces of the dishes were covered with a layer of the amorphous powder.

In the series that were covered no effect was noted upon the growth of any of the microorganisms; subsequently, these were carefully tested for the presence of phosphoric acid, but not the slightest trace was found to have been present in the medium.

Those left open were covered with a great quantity of phosphoric acid, and all the organisms were found to have been killed.

Further experiments made in the same manner as the above were confirmatory throughout.

An attempt was made to force the fumes through cotton loosely packed in a tube 1 inch in diameter, using about 125 grammes pressure to the square inch, but no fumes could be detected. (This was readily accomplished by sulphur dioxide.)

The conclusions then are, 1st, that phosphoric pentoxide is a disinfectant to surfaces only; 2nd, it has no penetrating power, and is altogether unfit for fumigation of anything where penetration of the agent is desirable.

From the foregoing, it was not deemed worth the while to pursue the subject further when it promised so little; therefore, no observation on the spores of different microorganisms was made.

I am, sir, yours very respectfully,

JOS. J. KINYOUN,

*Assistant Surgeon M.-H. S.*

To the SUPERVISING SURGEON-GENERAL.

*Tampa, Fla.*—Dr. J. P. Wall writes as follows, under date of December 4, 1888:

With the end of November the guards at Plant City were discharged, and yesterday the board of health of this county met and raised all local quarantines in the county, and asked all other health boards that had quarantined against Tampa and Hillsborough County to raise their quarantines.

It has been rather continuously cool since the 24th ultimo, with even light frost on the morning of the 27th, with the thermometer ranging from 50° F. to 70° F. in the middle of the day. To-day it is raining, with the thermometer at this moment (12 m.) to 57° F., and the probability is that it will end in a norther, with a decided cold snap and frost.

During the whole season, after the first two weeks, the character of the fever here was of a mild type with all who had been living continuously in Tampa. The worst cases and the mortality was principally among those who at first ran off and then came back in September when the disease had almost died out for lack of material and new comers, the mortality being principally confined to these latter, with the exception of the first three deaths in August, the 13th and 14th. The same is to be noted with regard to the little town of Manatee, where the fever evidently prevailed last fall and winter, while it was rather fatal at Palmetto, which was evidently a new field. From this I infer that it will not be as bad the second year in any community with the resident population as it was the first. However, I must confess that Plant City was somewhat an exception to this rule, for after it reappeared there in June it was pretty bad, though quite a number of those were returned refugees.

I have seen one suspicious case since my last report, but the patient



is practically isolated, and no doubt contracted the infection anterior to the cool weather of the last ten days. Besides it is entirely too late in the season for it to take on an epidemic form, though as yet I am not encouraging unacclimated people to stop in Tampa any length of time.

The board of health has specially urged on the city authorities and the citizens generally the importance of fumigating houses and effects, and of airing the same as much as possible.

*Palmetto, Fla.*—Sanitary Inspector M. B. Harrison writes as follows :

December 5. "In my weekly telegram of yesterday I reported 'no new cases of yellow fever in Palmetto.' I have to-day discharged one case in the country, two miles from Palmetto. I hope this is the last case, but it will take time to tell. We had a light frost on morning of 25th of November."

And the following telegram :

December 11: "For week ending 6 p. m., Monday, December 10, there were at Palmetto, Fla., no new cases yellow fever; deaths, none. Last case took fever November 19. Total number cases to date, 85."

*Jacksonville, Fla.*—Dr. J. Y. Porter telegraphs as follows :

December 7. "Board of health reports new cases, none; deaths, none; total cases, 4,704; deaths, 412. Patients, St. Lukes, 1. Houses fumigated, 127; houses inspected, 444."

December 8. "Board of health reports new cases, 1; deaths, none; total cases, 4,705; deaths, 412. Patients, St. Luke's, 1. Houses fumigated, 94; houses inspected, 206; not finished."

December 9. "Board of health reports no new cases, and no deaths. Patients, St. Lukes, 1."

December 10. "Board of health reports no new cases, and no deaths. Patients, St. Luke's, 1. Houses fumigated, 99, and 179 inspected but not fumigated for causes already stated; vacant houses, 260; total houses visited, 540."

December 13. "The board of health announces no more fever bulletins will be issued. They suggest the fumigating of mails be suspended, and also for baggage going north. Transportation of household goods to be prohibited for one or two weeks yet."

*Gainesville, Fla.*—Assistant Surgeon Martin, U. S. N., telegraphed as follows :

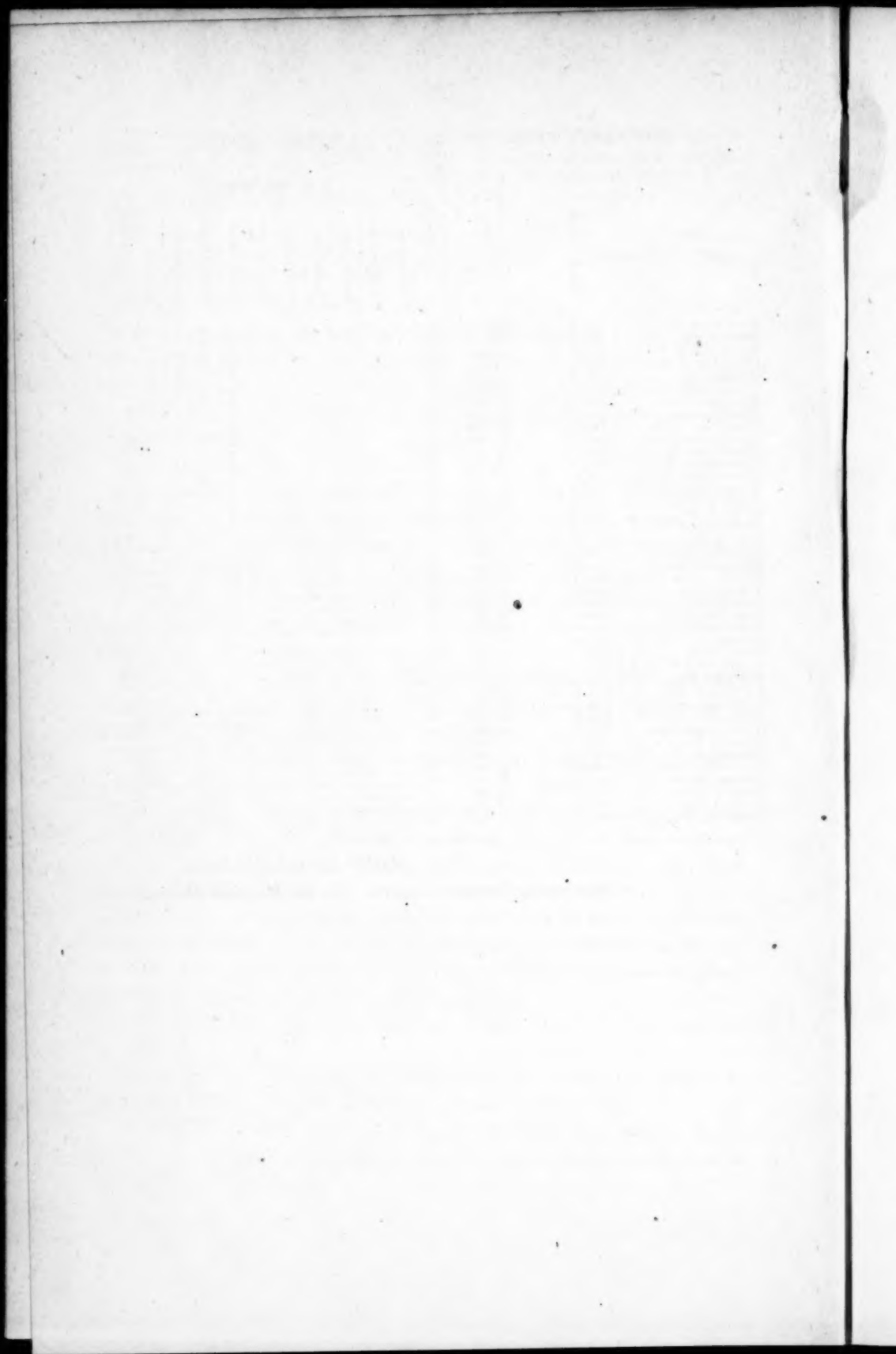
December 7. "Fumigation completed. Dr. Posey can attend to replacing bedding, which is all that remains to be done."

*Newark, N. J.*—The health officer, under date of December 4, reports "a very marked decrease in typhoid and scarlet fever, and quite a decrease in diphtheria."

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Dec. 8.	1,546,012	700						8	29	36	12	13
Philadelphia, Pa.	Dec. 1.	1,016,758	302						5	9	5		1
Brooklyn, N. Y.	Dec. 1.	805,885	300						4	3	30		9
Brooklyn, N. Y.	Dec. 8.	805,885	304						7	6	20	12	4
Chicago, Ill.	Dec. 8.	800,000	268						10	5	20	6	
St. Louis, Mo.	Dec. 1.	440,000	134						3	1	8		
Baltimore, Md.	Dec. 8.	431,879	152						12	1	3	1	
San Francisco, Cal.	Nov. 30.	330,000	140						3		6		
Cincinnati, Ohio.	Dec. 8.	255,139	107						6		11		
New Orleans, La.	Dec. 1.	248,000	142						1	1	1		1
Pittsburgh, Pa.	Dec. 11.	230,000	56						2		2		1
Milwaukee, Wis.	Dec. 8.	195,000	64						1	3	1		
Minneapolis, Minn.	Dec. 1.	180,000	37						1	2	2		
Kansas City, Mo.	Dec. 8.	180,000	26						3				
Newark, N. J.	Dec. 4.	175,000	70						22		4		
St. Paul, Minn.	Dec. 8.	175,000	28						2	1	4		
Rochester, N. Y.	Dec. 8.	120,000	24						1				
Detroit, Mich.	Dec. 1.	116,340	56								4		1
Detroit, Mich.	Dec. 8.	116,340	65								2		
Richmond, Va.	Dec. 3.	100,000	40						2		1		
Denver, Colo.	Dec. 7.	96,000	30						1	2			
Toledo, Ohio.	Dec. 7.	80,000	18						1	1			
Camden, N. J.	Dec. 5.	70,000	22						4		1	1	1
Nashville, Tenn.	Dec. 8.	65,153	15						2				
Fall River, Mass.	Dec. 8.	65,000	20							1			
Charleston, S. C.	Dec. 8.	60,145	37						3		1		1
Lynn, Mass.	Dec. 8.	50,000	10										
Manchester, N. H.	Dec. 1.	41,000	12								1		
Portland, Me.	Dec. 8.	40,000							1				
Davenport, Ia.	Dec. 1.	33,715	8								3		
East Saginaw, Mich.	Dec. 1.	33,000	8										
Burlington, Ia.	Dec. 6.	30,166	5								1		
New Albany, Ind.	Dec. 8.	30,000	4						2				
Altoona, Pa.	Dec. 1.	29,546	4										
Auburn, N. Y.	Dec. 8.	26,000	8										
Haverhill, Mass.	Dec. 8.	25,000	8										
Newton, Mass.	Dec. 8.	21,105	7										
Newport, R. I.	Dec. 6.	20,466	6								2		
Keokuk, Ia.	Dec. 8.	16,000	4										
Pensacola, Fla.	Dec. 1.	15,000	6										

JOHN B. HAMILTON,  
*Supervising Surgeon-General, Marine-Hospital Service.*



## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
          { No. 51. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,

U. S. MARINE-HOSPITAL SERVICE,

Washington, D. C., December 21, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended December 21, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended December 1 corresponded to an annual rate of 17.8 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Hull, viz., 13.2, and the highest in Cardiff, viz., 27.9 a thousand. Diphtheria caused 8 deaths in Manchester, 3 in Liverpool, 2 in Nottingham, and 2 in Oldham: Small-pox caused 2 deaths in Cardiff, and 1 in Sheffield.

*London.*—One thousand three hundred and fifty-two deaths were registered during the week, including measles, 141; scarlet fever, 24; diphtheria, 34; whooping-cough, 20; enteric fever, 11; diarrhoea and dysentery, 13; simple cholera, 1. The deaths from all causes corresponded to an annual rate of 17.2 a thousand. Diseases of the respiratory organs caused 258 deaths; different forms of violence, 54; and 6 cases of suicide were registered. In greater London 1,678 deaths were registered, corresponding to an annual rate of 15.8 a thousand of the population. In the "outer ring" the deaths included measles, 16; diphtheria, 7, and whooping-cough, 5.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended December 1 in the 16 principal town districts of Ireland was 20.7 a thousand of the population. The lowest rate was recorded in Wexford, viz., 4.3, and the highest in Lurgan, viz., 51.3 a thousand. In Dublin 155 deaths were registered, including whooping-cough, 1; enteric fever, 6; scarlet fever, 2; diphtheria, 2.

*Scotland.*—The deaths registered in 8 principal towns during the week ended December 1, corresponded to an annual rate of 19.1 a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Leith, viz., 12.6, and the highest in Paisley, viz.,

32.0 a thousand. The aggregate number of deaths registered from all causes was 483, including measles, 14; scarlet fever, 13; diphtheria, 10; whooping-cough, 7; fever, 11, and diarrhoea, 5.

*Marseilles, France.*—The United States consul in his dispatch dated December 4, 1888, states that "the health of the city is notably good, the daily average of 24½ deaths being six below the normal average. An epidemic of small-pox prevails in the Department of Vanelure, on the northern border of this district." There were 741 deaths registered during the month of November, including cholera (sporadic), 1; small-pox, 16; enteric fever, 36; scarlet fever, 1; diphtheria and croup, 40; measles, 10; whooping-cough, 4; diarrhoea enteritis, 56.

*Catania, Italy.*—The total number of deaths registered during the month of November, 1888, was 347; estimated population, 107,167. There were 118 deaths from small-pox during that period.

*Treiste, Austria.*—There were 27 cases and 11 deaths from small-pox during the month of November, 1888.

*Gibraltar.*—The following quarantine notices are published:

November 22, 1888. The board of health at a meeting held this day has decided that in future any vessel communicating, whether in quarantine or not, with any port declared to be infected will be treated as an infected vessel.

December 1, 1888. The board of health at a meeting held this day has decided to remove the quarantine now imposed on all arrivals from the Canary Islands, with the exception of those from the island of La Palma, the restrictions on which will continue in force as heretofore.

*Maceio, Brazil.*—Thirty-eight deaths were registered during the month of October, 1888, including 3 from small-pox.

*Guayaquil, Ecuador.*—The United States consul reports deaths from measles as follows: Week ended October 23, 127; October 30, 124; November 6, 97; November 13, 76; November 20, 64.

*Cardenas, Cuba.*—December 7, 1888. Good health prevails in town and harbor. Weather cool.

*Havana, Cuba.*—Three deaths from yellow fever were registered during the week ended December 8, 1888.

Dr. D. M. Burgess, Sanitary Inspector Marine Hospital-Service, at Havana, reports as follows:

HAVANA, ISLAND OF CUBA, December 6, 1888.

SIR: I have the honor to inform you that there were 539 deaths in this city during the month of November.

Thirty-eight of those deaths were by yellow fever, 30 by so-called pernicious fever, 1 by intermittent fever, 2 by paludal fever, 6 by enteric fever, 3 by croup, and 1 by diphtheria.

So large a number given (30) as dying of pernicious fever, while only 3 are given as dying of other forms of paludal fever, excites the sus-



picion that not a few of those given as dying of pernicious fever may have died of yellow fever.

Every now and then cases of small-pox arrive at this port on the Spanish mail steamers and are put in the hospitals here, particularly the military, but as yet I do not learn of its having spread from there.

Very respectfully, your obedient servant,

D. M. BURGESS,

*Sanitary Inspector, M.-H. S.*

To SURGEON-GENERAL HAMILTON.

# MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—								
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
Paris.....	Nov. 30....	2,260,946	806	.....	.....	3	.....	12	4	27	20	3
Paris.....	Dec. 1.....	2,260,945	876	.....	.....	4	.....	20	2	27	33	5
Glasgow.....	Dec. 1.....	545,678	200	.....	.....	.....	.....	2	.....	5	.....	.....
Warsaw.....	Nov. 24....	444,814	225	.....	.....	7	.....	.....	13	11	.....	.....
Amsterdam.....	Dec. 1.....	389,916	160	.....	.....	.....	.....	2	.....	4	.....	.....
Copenhagen.....	Nov. 27....	300,000	120	.....	.....	.....	.....	1	.....	7	.....	.....
Munich.....	Nov. 24....	275,000	170	.....	.....	.....	.....	1	.....	7	.....	.....
Palermo.....	Nov. 24....	250,000	72	.....	.....	.....	.....	.....	1	8	.....	.....
Palermo.....	Dec. 1.....	250,000	65	.....	.....	1	.....	.....	1	1	.....	.....
Bristol.....	Nov. 24....	226,510	73	.....	.....	.....	.....	.....	.....	.....	.....	.....
Genoa.....	Dec. 1.....	179,875	94	.....	.....	1	2	1	1	1	.....	.....
Trieste.....	Nov. 17....	154,500	95	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trieste.....	Nov. 24....	154,500	78	.....	.....	4	.....	.....	.....	4	.....	.....
Toronto.....	Dec. 8.....	130,000	38	.....	.....	.....	.....	2	.....	.....	.....	.....
Stuttgart.....	Dec. 1.....	125,510	41	.....	.....	.....	1	.....	.....	2	.....	.....
Bremen.....	Nov. 24....	122,000	42	.....	.....	.....	.....	.....	.....	.....	.....	.....
Havre.....	Nov. 24....	112,074	44	.....	.....	2	.....	7	.....	2	.....	.....
Havre.....	Dec. 1.....	112,074	65	.....	.....	1	.....	4	.....	.....	.....	.....
Pernambuco.....	Nov. 13....	110,000	68	.....	.....	.....	.....	2	1	.....	.....	.....
Pernambuco.....	Nov. 20....	110,000	61	.....	.....	.....	.....	1	1	.....	.....	.....
Leghorn.....	Dec. 3.....	102,540	42	.....	.....	.....	.....	.....	.....	1	.....	.....
Mayence.....	Nov. 3.....	65,802	20	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cadiz.....	Nov. 24....	65,028	62	.....	.....	.....	.....	.....	1	.....	.....	.....
Cadiz.....	Dec. 1.....	65,028	46	.....	.....	.....	.....	.....	.....	.....	.....	.....
Guayaquil.....	Nov. 13....	30,000	122	.....	.....	.....	.....	.....	.....	.....	76	.....
Guayaquil.....	Nov. 20....	30,000	103	.....	2	2	.....	.....	.....	.....	64	.....
Ceara.....	Nov. 15....	26,943	28	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gibraltar.....	Nov. 25....	23,631	10	.....	.....	1	.....	.....	.....	.....	.....	.....
Gibraltar.....	Dec. 2.....	23,631	10	.....	.....	.....	.....	1	.....	.....	.....	.....
Kingston, Can.....	Dec. 7.....	17,300	4	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Thomas.....	Nov. 23....	13,500	5	.....	.....	.....	.....	.....	.....	.....	.....	.....
Palta.....	Nov. 17....	4,000	0	.....	.....	.....	.....	.....	.....	.....	.....	.....

## UNITED STATES.

Dr. J. P. Wall reports as follows :

TAMPA, FLA., *December 10, 1888.*

SIR: Having been appointed by you agent of the Marine-Hospital Bureau for Hillsborough County, on the 21st of July, 1888, to take charge of relief measures on account of the existence of yellow fever in Plant City, I at once entered on the discharge of my duties.

The board of health of Hillsborough County had, on the 9th of July, employed twenty guards to isolate Plant City and prevent communication with the adjacent country. From the 23d of July these

guards were continued at the expense of the Marine-Hospital Bureau until the 30th of November ultimo. Of these guards three were employed at \$3 a day, and the remaining seventeen at \$1.50 a day. Of those employed at \$3 a day one was placed in command, one was detailed as my clerk and general agent in my absence, and the other, being a physician, was designated to attend the sick and supervise such measures of disinfection as might from time to time be ordered. The names of these three gentlemen were W. P. Head, representing the town as acting mayor, Col. J. L. Young, and Dr. J. W. Douglass. All three discharged their duties with fidelity and zeal.

Some changes in the seventeen guards were made from time to time, generally by their quitting, when others would have to be employed. But one guard had to be discharged for cause, and that one was one E. S. Tyner, who failed to carry out orders in preventing people from going into Plant City.

During the first of August all the dwellings, out-houses, and privies in Plant City were fumigated with sulphur, in compliance with your order of the 30th of July.

Doctor Douglass attended the sick in the country, who left Plant City the first week in July, and he was instructed to keep up a course of inquiries as to sickness in the country and visit the sick, and in case the disease proved to be yellow fever, or was suspicious, to have the necessary measures taken to prevent the spread of the infection. By August the surrounding country was free from sickness, with only an occasional case in Plant City, till the 21st of August.

On August 7 the fever made its appearance in Tampa, and by the end of the week there were eight cases. It was of a grave type in most of the cases first stricken, three deaths occurring out of the first eight. Its type then assumed a milder character, especially with the unacclimated who remained in the city.

On the 12th of August the presence of yellow fever in Tampa was officially announced, and the board of health established local quarantines within the county against Tampa, and all the counties in the State put on quarantines against Tampa and the county.

All the measures met with a great deal of opposition among the people of Tampa, and the president of the board of health was the object of much malicious abuse; especially from early in August till the 24th of September, before the next death took place—a stranger who had been here about two weeks.

Fortunately the number of unacclimated people in Tampa was not large, and the great majority of the cases being of a very mild type, there was not much necessity for relief measures to be extended by the Government. In only two instances did I find it necessary to employ nurses at Government expense. Considerable bedding was destroyed at Plant City, and some little in Tampa, in compliance with your instructions of August 9. In Tampa there prevailed during August and September some kind of ephemeral fever of from one to three days duration, generally designated dengue, certainly not yellow fever, and lacking in many of the symptoms of dengue. So that if a general destruction of bedding had been ordered later in the season, I do not see how it would have been possible to discriminate between the two fevers so as to get at the really infected bedding. I was often puzzled by this fever, which was not yellow fever, to tell it from the genuine yellow fever, and the other physicians who reported cases, rarely reported the

milder types of yellow fever on account of the presence of this other fever and their confused inability to differentiate the two. This mild nondescript fever, dengue, or whatever it was, disappeared pretty well in the early part of October. One physician denied all through there being any yellow fever here, notwithstanding he lost a patient with black vomit and urine poisoning, and two physicians who saw the case, in consultation, pronounced it yellow fever. I mention these facts to give you some idea of the difficulties of the situation.

From the 7th of August only 10 deaths occurred from yellow fever up to the present time—3 in August; 1 in September; 2 in October; and 4 in November. One of these in November was a short distance in the country from Tampa.

About the 25th of August the fever appeared at Mango, a small depot place 10 miles from Tampa on the South Florida Railroad. There were some fifteen cases with no deaths. Only one patient was seriously ill, and he was attended by a physician from Tampa who diagnosed the character of the disease. The country physician in attendance previously calling it malarial bilious fever.

All claims against the Government have been rendered, and the total amount of expenditures through the Marine-Hospital Bureau you have.

December 15.—Tampa is, I think, free from the fever. The case taken sick on the 1st instant was a lingering one, with the nephritic complication, yellow color, blueing of gums, etc. She is now convalescing.

I notified the S. F. R. R. Company yesterday that it was safe for them to resume business here.

It is possible for there to be an occasional case of yellow fever during the next few weeks. About this it is impossible to predict with certainty.

Very respectfully, your obedient servant,

JOHN P. WALL, M. D.,  
President Board of Health, Hillsborough,  
U. S. Agent M.-H. Bureau.

TO SURGEON-GENERAL HAMILTON.

*Enterprise, Fla.*—Dr. J. F. Hartigan, sanitary inspector Marine-Hospital Service, reports as follows:

WASHINGTON, D. C., December 17, 1888.

SIR: On my return from Punta Gorda, the 26th October, I found a dispatch at Bartow from Dr. King Wylly to the effect that yellow fever existed at Enterprise. I left on the first train for that place under your instructions to "investigate the matter there and report," arriving at Sanford the next morning. On account of the excitement and confusion here over the announcement, the infected point being only four miles across the lake, and there having been daily communication with it, some delay occurred before I could secure transportation. I reached there, however, in the afternoon, and was met at the wharf by Doctors Posey and Caldwell.

The streets were deserted, the town depopulated, and there was everywhere noticeable a funeral aspect. Dr. W. H. Caven, the oldest physician of the place, had just died, and the body still laid as he appeared in the throes of dissolution. It being necessary to remove him as soon as possible to permit of fumigation and disinfection of the

premises, a post-mortem examination was agreed upon at once. Accordingly this was made in the presence of Doctors Posey and Caldwell, with the following result:

*Rigor mortis* not yet marked. The whole surface, and conjunctivæ, presented the characteristic icteric tint; there was much emaciation. The eyes and mouth were stark open, some of the black vomit being still oozing from the angle of the latter and nostrils, and was smeared over his head and moustache, extending to the pillow and bedding. The lungs showed a number of infarctions anteriorly, while posteriorly there was passive congestion. Heart was in a state of acute fatty degeneration, and contained a small amount of dark fluid blood. The appearance of the liver was perhaps pathognomonic of the disease; it presented the peculiar boxwood or mustard color so commonly found, a fatty oleaginous material adhering to the knife on section. Spleen unaltered. The stomach was three-fourths filled with black vomit, and there were patches of redness, and softening of its mucous lining. Small intestines entirely normal, containing nothing except inspissated mucus. Kidneys were congested; bladder empty. Brain not examined.

The second necropsy—Doctors Posey, Caldwell, and Gill present—was on the body of Mrs. Bennett. This case presented much the same appearance as the foregoing. There was an absence of infarctions, however, and the boxwood color of the liver was less marked. Stomach contained even more black vomit. In addition I found chronic valvular heart disease; and atrophy as well as cystic and calcareous degeneration of right kidney. The left kidney was twice its normal size, and had evidently been performing double duty for a long time. Intestines and bladder were empty.

I now directed my attention to the cause of the epidemic. It seems that on Sunday, the 16th of September, the steamer "City of Jacksonville" from Jacksonville was moored at the Watson Wharf, where she was quarantined ten days, no one being allowed to go ashore. The watchman on board was sick on her arrival; and as the boat could not provide him with the delicacies necessary in his condition, the wife of O. H. Voss, who lived on the place, cooked him chicken broth several times and furnished fresh water daily. This was carried half way from the house to a truck, which a man named Phillips pushed on the wharf and returned. On the 23d Voss went aboard the "Jacksonville" for a little while. Three days afterwards, having retired as well as usual, he awoke about 5 o'clock with a lazy feeling, as he expresses it, and an hour later he was seized with a headache and a creeping or chilly sensation in the small of the back, which extended up to the neck, along his arms, around the chest, and down his legs. He immediately went to bed and was covered with blankets. The chill lasted an hour, a high fever following, which "cooled down" about two in the afternoon. Voss had lived in Florida seven years, and had frequently boasted to his wife of his health, which led her to remark that at last he had chills and fever. He told her it was something more than ordinary chills and fever, and to send for a doctor at once. The fever, as stated, diminished at 2 o'clock, but in half an hour it returned violent as before. It then gradually became less until the third day, when it had entirely subsided. During all this time he retained his faculties but felt dazed. There was suffusion of the eyes, nausea and vomiting. The aching and weakness, especially in the back and from the knees down, lingered several days.



Mrs. Voss was taken sick the 11th day from her husband's seizure, and had exactly similar symptoms. The stomach rejected everything for five days. There was a constant burning of the epigastrium. She had a relapse on account of errors of diet. The ejecta at first was greenish, but later the coffee-ground appearance at the bottom of the vessel led to the remark that she thought she had yellow fever. The husband was now of the same opinion, but would not alarm her by saying so. Flakes of grayish mucus were also in the matter vomited, and long strings network-like passed from her bowels, resembling tripe on washing. This was followed by black coagula, which, on agitation, looked like black paint. While she was sick her little nephew had a mild attack.

The following persons visited the house during the period of her sickness: Miss Cleland and Mrs. Whitely, nurses; Miss Bradley, an old colored man named Armwood, Mrs. Atkinson called one evening, and Mrs. Ferguson and daughter another. Of these Mrs. Atkinson was first taken, then Miss Cleland, Armwood, and Mrs. Ferguson and daughter followed. Doctor Long was taken sick while attending Miss Bradley and others, but recovered. Mrs. Whitely was the only person exposed who did not contract the disease. Mrs. Bennett was nursing her sister, Mrs. Atkinson, when Mr. Bennett called at the House. He was seized on the 16th of October, and died the 21st. Mrs. Bennett took sick later, dying on the 31st. While attending her Doctor Caven was taken and died the 27th. Miss Bradley died on the 26th of October.

From these the disease spread until there were about forty cases perhaps in all, many of them, towards the last, being hardly typical—at least by the 1st of November the epidemic seemed to have lost its virulence. The true nature of the disease was not announced until Doctor King Wyly, of Sanford, was called to see Doctor Caven, and the question may be asked why? Mr. Bennett was the first victim, and many who attended his funeral carried with them the germs of the disease. No one had suspected what it was. It is, however, but just to Doctor Long to say that shortly before he was stricken down, his suspicion was aroused, and he had intended to make it known. Doctor Caven was also prostrated, and he, too, was unable to communicate what he thought. So it was left for Doctor Wyly to assume a responsibility which medical men, who know anything of the temper of Florida towns, understand and appreciate.

Upon my arrival at Enterprise, the most extravagant reports of mortality were rife. The officials seemed to have all left, and it was difficult to get authoritative information. Of the list of nineteen deaths handed me as having occurred this summer, on analysis I am able to state that only the four mentioned died of yellow fever. Of three who died in June, it is true there were suspicious symptoms, but they were clearly ascribable to malarial causes alone; the balance had no relation whatever to the subject under investigation—some of them having taken place even the year before.

The following table of all cases of fever during the warm months, collated by Doctor Gill, confirms this:

May, 3 cases; June, 4 cases; July, 11 cases; August, 11 cases; September, 9 cases; October, 38 cases.

He also made a census, which showed a population of 120 white, 380 colored, comprised in an area two and a half miles square.



Had the town been in a good sanitary condition, it is clear that the disease, after its introduction, could not have made such rapid headway. But a tour of inspection through it revealed a criminal violation of ordinary hygiene rules. Over its territory are scattered numerous ponds and marshes, generally without an outlet or an attempt at one. Perhaps the most pernicious of these is just west of the hotel. In it is dug a pit about fourteen feet by ten, lined by boards, which has been a receptacle for the hotel sewerage. The intention was to regularly mix this with dried muck and use as a fertilizer, but it had not been properly carried out, and the matter for a long time kept leaking through, as was evident from the surrounding exhalations.

I found the streets and vacant lots generally overgrown with weeds and decaying vegetation; here and there were scattered heaps of all kinds of garbage; the drains were obstructed, and there was no system of disinfection or removal of excreta. Perhaps the worst death-trap that was ever found in a christian community existed here. In the court-house yard the jail was situated; almost adjoining the latter a privy-house was built over a cesspool 10 feet square and 4 feet deep, with a 6-inch pipe communicating. Not only was this intended for the excrement from the jail, but it was an open place where the passerby entered. On account of the porosity of the soil, the fluids percolated, and there was hardly ever an overflow. Two and a half years ago this pest-hole was established by authority! having been permitted to exist since. Of course it was a subject for early attention. After making a bonfire of the building, and free disinfection, with a dummy-engine I removed in closed barrels to the suburbs more than a thousand gallons of filth, and filled the opening with dry sand. The evil consequences of the condition described were noticeable as far back as June, and in September, when the county-seat and jail were removed to DeLand. A prisoner named Riley, who was confined only 2 months, was a strong, robust man when committed, and on transferring him he was but a shadow of his former self. Another man, after 5 months' incarceration, was turned loose, and has since been a physical wreck. The pale, wan features and languor of the jailer's family attested plainly the havoc made among them. The reason given for the nuisance not being abated was because it was in the court-house grounds, and was county property. The town authorities and health board frequently protested against it, but the commissioners postponed action from time to time. It is but one illustration of the feebleness of county boards of health in Florida. They are mixed boards, and are all appointed by the governor, generally on the longest list of recommendations. It is time that the State should wake up to its interests, and pass a law creating a State board which, if I may be permitted to make the suggestion, should be composed exclusively of medical men and sanitarians, with authority to *act* and appoint county sub-boards, to consist also of competent medical men; and let the powers of the corporate authorities be subservient. Thus will be saved a repetition of the absurd measures, hardships, and conflict which prevailed during the late unfortunate epidemic.

The rainy season in Florida generally begins in July and lasts till September. May is the worst month for malarial fever, at least in the vicinity of Enterprise. In June, as already referred to, there were three deaths of a suspicious character, but the rain which soon followed arrested its onward march. It has often been observed by physicians

and old citizens that in this part of the State only during drought does fever and dysentery prevail. Heavy rains drown the highland vegetation, and when the water recedes exposure to the hot sun produces disease.

Having shown, as I believe, satisfactorily, the importation of the disease, and the presence of pabulum for its propagation, the theory of local origin can hardly be entertained, and so it is, in my opinion, with the history of yellow fever in all the Southern towns. Doctor Hand, who investigated the outbreak at New Berne in 1864, was so beset with difficulties in establishing proof of its introduction that he referred it to local causes, and enumerated the various influences which he thought produced it. But did he go back to the beginning? In 1812 New Berne was afflicted with a similar visitation, and the pestilence was declared authoritatively at the time to have been introduced by a vessel from one of the West India Islands. May not the ballast from such craft have been thrown overboard, and remain all these years hibernating; and during the several days of excessively low water referred to in the doctor's report, the sand and mud thrown from the exposed river bottom into the new embankment, have been the immediate and exciting cause of the disease? This was the history of the Savannah epidemic in 1876, the first cases having been traced to boys who played on a pile of ballast partly submerged, which was thrown overboard at the time by a West India trader; and so with other instances that might be enumerated.

Now it is conceded that filth enters as a necessary factor in the production of yellow fever. Of the Florida towns visited, with one or two exceptions, it is not practicable to direct the sewerage into tidal water, where it can be carried away and become harmless. At all the other places its disposition is dangerous and unsatisfactory. In only one town did I find a reliable system for its purification and utility. Even here the approach to the works was indicated by a strong olfactory sense, on account of indifferent preliminary process. Nearly all the towns profess to have a system, but it is hazardous. In one place I found what had been attempted as an artesian well, utilized by permitting the fluids from hotels to enter the cavern, where, no doubt, it meanders under ground for miles, finally finding its way to the beds of lakes, and possibly contaminating their crystal waters. Under these circumstances it occurs to me that all human excrement should be subjected to incineration. Every town should have a furnace for the purpose. This is quite feasible, and ought to be practicable every where. In a school-house in this city, as well as in other places, it has proved a marked success. The idea is not new, but its adaptability to Florida towns, and all others similarly situated, will, I think, be apparent. Not only will it forever remove one of the factors essential to the production and propagation of yellow fever, but it will also contribute to prevent typhoid fever, as well as have a general wholesome effect on the community.

Respectfully submitted,

J. F. HARTIGAN, M. D.

To SURGEON-GENERAL HAMILTON.

Lakeland, Fla.—

WASHINGTON, D. C., December 18, 1888.

SIR: After completing my investigations at Enterprise, I wrote the Sanford authorities for permission to land at midnight to take the train,

in pursuance of instructions to "have your clothing fumigated and proceed to other points named in original orders."

Doctor Montgomery, a member of the Orange County health board, replied, "Mr. Moran will send a special car for you to the junction at Enterprise. If you go to Osteen Mr. Carlisle will make all arrangements. Your coming this way is emphatically prohibited by the city authorities." After a drive of 20 miles to Osteen and back to the junction, I was locked in by the conductor and compelled to travel all night in a box car, without covering, or any accommodation except the bare floor to lay on. I reached Camp Perry the next afternoon. On the 16th of November I arrived at Lakeland, Polk County. This place was only laid out as a town four years ago, and derives its name from the peculiarity of its location, having six clear-water lakes within the corporate limits, and many more in its vicinity. The population is about eight hundred. It is 30 miles east of Tampa, at the junction of South Florida and Florida Southern railroads. This town is perhaps the highest in South Florida, excepting Brooksville, being 210 feet above the sea, and the high rolling and gently undulating character of the land render artificial drainage unnecessary. The water supply is principally from wells averaging 30 feet deep. There is no systematic removal of night soil. The cemetery is situated three-fourths of a mile from town. Burial permits are not required.

Mayor, Epps Tucker; Physician, Dr. J. M. Perry.

There have been no deaths from zymotic causes, but after heavy rains a mild form of remittent fever and dysentery prevail. Marl, or rotten limestone, is found some distance from the town, and at Plant City, ten miles away, where it underlies the whole hill upon which that place is built. It is a matter of common observation that wherever this marl exists, it is characterized by fever of a bilious, conjestive, or icteric type.

Respectfully,

J. F. HARTIGAN, M. D.

SURGEON-GENERAL HAMILTON.

*Dade City, Fla.—*

WASHINGTON, D. C., *December 19, 1888.*

SIR: Dade City, the county seat of Pasco, has a population of only 250. It is governed by county commissioners. The water supply is from wells and cisterns. There is no system for removal of night-soil.

Doctor Preston, a physician of the place, informs me that all varieties of malarial fever prevail there on account of the surrounding low-lands being periodically submerged from heavy rains. For the last two years the usual form has been characterized by an icteric condition; albumen is present in most of the cases, and sometimes a temperature of 105° to 106° is reached. The algid state has generally passed before the doctor is called in, when he may find the high temperature mentioned. There is no regular chill preceding. The patient will say he has "inward fever." The eyes are injected with yellowness of conjunctivæ; pulse perhaps 110 to 115. There is gastric disturbance, high-colored urine, soreness of muscles, and aching of spine from the occiput down. Spleen does not show any characteristic malarial condition.

The doctor has had 60 to 70 of these cases during the past season, with

but one death; this patient had black vomit. The preliminary state or susceptibility may last for weeks—depending upon the power of resistance, and if the man is temperate—or as long as there is an even temperature he will have a capacity to resist or hold his own. When at the first damp or cold change he is compelled to take to his bed, and for the first time the doctor is sent for, every organ of the body being now in a state of passive congestion from adynamia, there is partial arrest of secretions. A prominent and persistent symptom is burning of the stomach, like a ball of fire, and tenderness of hepatic region. In other cases, or perhaps in the same patient, the next day the want of correlation may be noticed of pulse and temperature—the pulse is perhaps 50 to 60, and temperature 103 or 104, lasting sometimes for days. Lately, an icteric condition has been observed from the first. In fatal cases, all the symptoms are aggravated, especially the “ball of fire.” There is sighing and interrupted respiration, fluttering pulse, singultus, subsultus, &c.

The duration of the disease is generally two weeks. Early attention, or reëstablishment of the secretions forestalls the fever, and the patient is about in two or three days, where otherwise the disease would go on the allotted time.

Respectfully,

J. F. HARTIGAN, M. D.

To SURGEON-GENERAL HAMILTON.

#### FUMIGATION OF VESSELS.

The following correspondence relative to the arrangements now being made for the fumigation of vessels at national quarantine stations, is published for general information:

U. S. MARINE-HOSPITAL SERVICE, DISTRICT OF THE GULF,  
*Port of Ship Island, Miss., Surgeon's Office, July 28, 1888.*

SIR: It is evident from Doctor Kinyoun's report that a larger percentage of  $S. O_2$  than is obtained by the method of the Louisiana Quarantine is required for the disinfection of the holds of vessels, and it is doubtful to me if any considerable proportion is attainable by their open furnace method. I, therefore, would call your attention to the following considerations:

1. The maximum amount of  $S. O_2$  attainable by burning sulphur in atmospheric air is 20 per cent. (by volume) of the total residue of combustion. This is obvious. If a larger proportion than 20 per cent. is required, acting during the time and pressure at our disposal, it must be produced by chemical decomposition, which can produce the gas almost without limit, but at considerable cost.

2. Practically a much less proportion than 20 per cent. is obtainable, especially by the open furnace method. Doctor Kinyoun found from 2 per cent. to 6 per cent. This 6 per cent. for the amount used is obviously an error of analysis, it is impossible. (I can in general approximate 8 per cent. to 12 per cent.—in one case 14 per cent.—by small pots burnt in the hold.)

It would seem that the more perfect combustion, of the oxygen I mean for the sulphur is in excess, would be accomplished by a hot blast forced through tuyères (or a pipe perforated with small holes



might do better) through molten sulphur, or projected with some force on the surface of burning molten sulphur. If the blast be hot and sufficiently divided to insure good contact, I submit that practically, all of the oxygen will combine with the sulphur. I believe by this method very nearly 20 per cent. of the atmosphere of the hold can be replaced by  $S. O_2$  under whatever pressure the fan will give (and the greater the pressure the more efficacious) and at a cost but slightly greater than the open pan furnace of the Louisiana quarantine. The volatilization of sulphur (which would be considerable) can, if deemed desirable, be controlled by a cooled drum or worm on the pipe leading to the vessel, but if it be judged more desirable to deliver the gas hot (there can be no possible danger of fire), say  $300^\circ$  to  $600^\circ$  C., than to save the sublimed sulphur, this must be dispensed with.

It is natural I suppose for one to over estimate the value of his own ideas, but if the experiments now being conducted by Doctor Kinyoun show that 20 per cent. of  $S. O_2$  under any available pressure and time of exposure, is a reliable germicide, I believe that this method will enable us to disinfect the holds of ships cheaply and certainly, which we do not now, and our "atmosphere surcharged with the germicide gas" will not be like Doctor Holt's one-half of 1 per cent.

If 20 per cent. is not sufficient, we must go to the action of  $H_2S. O_4$  or copper, or some similar process, or use chlorine, which I can generally use, my vessels being in ballast almost entirely.

If you think the use of the above principle will be of advantage to the service, I will be very glad to place it at its disposal.

Very respectfully,

H. R. CARTER,

*Passed Assistant Surgeon, U. S. M.-H. S.*

To SUPERVISING SURGEON-GENERAL, M.-H. S.,

*Washington, D. C.*

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TREASURY DEPARTMENT,

OFFICE SUPERVISING SURGEON-GENERAL, M.-H. S.,

*Washington, D. C., August 4, 1888.*

Respectfully referred to Assistant Surgeon J. J. Kinyoun (through medical officer in charge) New York, N. Y., for his information, and such remarks as he may have to make on the subject.

JOHN B. HAMILTON,

*Supervising Surgeon-General, M.-H. S.*

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LABORATORY OF U. S. MARINE-HOSPITAL SERVICE,

*New York, N. Y., December 10, 1888.*

Respectfully returned to the Supervising Surgeon-General Marine-Hospital Service with the statement that from observations made upon the germicidal properties of  $S. O_2$ , it has been determined that air containing 10 per cent. of  $S. O_2$  proves effectual to all non-spore producing micro-organisms experimented upon, but has not in any strength been of value in killing the spores of anthrax. The time of exposure in all cases being not less than 24 or more than 96 hours. A report will be made in full at a later date. An experimental furnace has been constructed in the laboratory for the evolution of  $S. O_2$ , combining, it is thought, the good points, as is suggested in the plan by Passed As-



sistant Surgeon H. R. Carter, and that in use at the Louisiana quarantine. It is constructed upon the principle of a reverberatory furnace. The heat evolved in the combustion being utilized for heating the air quite hot as it comes in contact with the molten sulphur, the plan of which is set forth in the appended sketch. Three sides were constructed of brick, the fourth provided with openings  $4\frac{1}{2}$  by 14 inches, for the reception of pans containing sulphur.

The shelves or partitions forming the compartments are of heavy sheet-iron, each compartment communicating with one another by a space ( $1\frac{1}{2}$  by 14 inches) at ultimate sides. The side left open is closed by a door fitting against the partitions in such a manner as to completely close them. The top is provided with a pipe for conveying off the gas and an aspirator for measuring the percentage of the gas. Communicating with the lowermost compartment is an aperture for the supply of air. This was so arranged that a forced draught could be kept up by means of a bellows. Ordinary iron baking-pans (8 by 12 by 2) were used as a receptacle for the sulphur. The sulphur is ignited in all of the pans and the door closed, and air is forced in by the bellows. The air now passing over each succeeding pan becomes more and more heated on being passed over a large area of sulphur, it was hoped that all the oxygen would be consumed. Repeated experiments gave from 14 to 16 per cent. of S. O<sub>2</sub>; temperature, 21° C., while burning sulphur in a closed space gave only 6 per cent. at 21° C.; i. e., it would not support the combustion of sulphur above that percentage.

The above results, with the plan of the furnace, were submitted to Captain Moore, United States Revenue Marine, who ere this has submitted the plans and specifications of a sulphur furnace for the vessel for Chandeleur.

I am, sir, very respectfully,

JOS. J. KINYOUN,  
Assistant Surgeon, U. S. M.-H. S.

*Port Townsend, Wash.*—Passed Assistant Surgeon A. H. Glennan, United States Marine-Hospital Service, reports under date of December 10, "found seaman at office with varioloid. Local health authorities promptly notified. Case removed to pest-house."

*Seattle, Wash.*—Acting Assistant Surgeon J. B. Eagleson reports, under date of December 10, "twelve cases of small-pox in city, with indications of increasing. Two cases from local steamers."

*Jacksonville, Fla.*—Dr. J. Y. Porter, telegraphs as follows:

December 14: "Houses fumigated, 22; and 108 inspected."

December 15: "Houses fumigated, 14; and 35 inspected."

December 16: "Refugees returning in large numbers daily. Cannot fumigation of personal baggage be stopped?"

December 17: "The city council and board of health have opened the gates to refugees to return to city, and passenger service to and from Jacksonville have been resumed. The fumigation of baggage is a matter of impracticability. Please order it discontinued."

On December 15 this bureau informed the General Superintendent of

the Railway Mail Service, Post-Office Department, that as the epidemic of yellow fever in Florida was practically over, fumigation of mails was no longer necessary. The fumigation of baggage ceased December 20. The Camp Perry will be retained through the winter and placed in readiness for any outbreak that may occur next summer.

December 18: "One new case of yellow fever to-day from refugees."

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
New York, N. Y.	Dec. 15.	1,546,884	634						10	34	23	19	20
Philadelphia, Pa.	Dec. 8.	1,016,758	316						6	8	13	1	3
Baltimore, Md.	Dec. 15.	431,879	161						4	1	4		2
San Francisco, Cal.	Dec. 7.	330,000	124						2				
Cincinnati, Ohio.	Dec. 15.	255,139	100						3	1	6		
New Orleans, La.	Dec. 8.	248,000	139							1	3		
Pittsburgh, Pa.	Dec. 15.	230,000	64						4	2	3		
Milwaukee, Wis.	Dec. 15.	195,000	62							2	3		
St. Paul, Minn.	Dec. 15.	180,000	32						1	1			
Minneapolis, Minn.	Dec. 15.	180,000	47								5		
Kansas City, Mo.	Dec. 15.	180,000	28								1		
Newark, N. J.	Dec. 11.	177,000	56								3		1
Rochester, N. Y.	Dec. 15.	120,000	35								1		
Richmond, Va.	Dec. 15.	100,000	24						1		1		
Denver, Colo.	Dec. 14.	96,000	29						1		2		
Toledo, Ohio.	Dec. 14.	80,000	13								1		
Camden, N. J.	Dec. 5.	70,000	14						3				
Nashville, Tenn.	Dec. 15.	65,153	15						1				
Fall River, Mass.	Dec. 15.	65,000	22							1			
Charleston, S. C.	Dec. 15.	60,145	31								2		
Lynn, Mass.	Dec. 15.	50,000	15								2		
Manchester, N. H.	Dec. 5.	41,000	13						1		4		
Portland, Me.	Dec. 15.	40,000	8						1				
East Saginaw, Mich.	Dec. 15.	33,000	8										
Burlington, Ia.	Dec. 13.	30,166	8										
Altoona, Pa.	Dec. 15.	30,000	4								1		
Auburn, N. Y.	Dec. 15.	26,000	8										
Haverhill, Mass.	Dec. 15.	25,000	5										
Newton, Mass.	Dec. 15.	21,105	3										
Newport, R. I.	Dec. 13.	20,466	1										
Keokuk, Ia.	Dec. 15.	16,000	3										

JOHN B. HAMILTON,  
Supervising Surgeon-General, Marine-Hospital Service.

## WEEKLY ABSTRACT OF SANITARY REPORTS.

VOL. III. { Abstract }  
              { No. 52. }

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL,  
U. S. MARINE-HOSPITAL SERVICE.  
Washington, D. C., December 28, 1888.

*Abstract of Sanitary Reports received through the Department of State from foreign countries during the week ended December 28, 1888, and information received through other channels.*

(Published in accordance with section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in 28 great towns of England and Wales during the week ended December 8 corresponded to an annual rate of 18.6 a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Derby, viz., 9.2, and the highest in Cardiff, viz., 29.8 a thousand. Diphtheria caused 3 deaths in Nottingham, 2 in Birmingham, 2 in Salford, and 2 in New Castle upon Tynes.

*London.*—One thousand four hundred and sixty-one deaths were registered during the week, including measles, 139; scarlet fever, 30; diphtheria, 35; whooping-cough, 13; enteric fever, 12; typhus, 1; diarrhoea and dysentery, 19. The deaths from all causes corresponded to an annual rate of 17.8 a thousand. Diseases of the respiratory organs caused 277 deaths; different forms of violence, 62; and 5 cases of suicide were registered. In greater London 1,764 deaths were registered, corresponding to an annual rate of 16.7 a thousand of the population. In the "outer ring" the deaths included measles, 12; diphtheria, 9, and scarlet fever, 4.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ended December 8 in the 16 principal town districts of Ireland was 22.4 a thousand of the population. The lowest rate was recorded in Wexford, viz., 4.3, and the highest in Armagh, viz., 31.0 a thousand. In Dublin 183 deaths were registered, including whooping-cough, 1; enteric fever, 8; scarlet fever, 1; diphtheria, 1, and diarrhoea, 1.

*Scotland.*—The deaths registered in 8 principal towns during the week ended December 8, corresponded to an annual rate of 19.3 a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Dundee, viz., 13.6, and the highest in Paisley, viz., 32.0 a thousand. The aggregate number of deaths registered from all causes was 487, including measles, 8; scarlet fever, 12; diphtheria, 11; whooping-cough, 7; fever, 3, and diarrhoea, 8.

*Calcutta.*—Eight hundred and thirty-eight deaths were registered during the month of September, 1888, including 66 from cholera, 239 from fevers, and 3 from small-pox.

*Havana, Cuba.*—*Infected ballast.*—The following letter has been received:

HAVANA, ISLAND OF CUBA, *December 14, 1888.*

SIR: Your note inclosing a communication to the Secretary of the Treasury relating to vessels reported as taking sand ballast at yellow-fever hospital wharf in this port, &c., and requesting information in reference to it, is received.

In reply I would say that although there is no yellow-fever hospital proper, for that disease exclusively, in this city or vicinity, there are two hospitals situated along the line of the wharves on the Havana side of the harbor and immediately adjacent to them. One of them is the military hospital, and though not exclusively a yellow-fever institution, none the less, yellow fever can be found in it without doubt every day in the year, and sometimes in large numbers. This hospital is located immediately contiguous to Tallapiedra wharf and between it and the arsenal and San José wharf.

The former wharf must receive much of its drainage and sewage (the others perhaps less) around and under it.

The other hospital, in which cases of yellow fever are often found, occupies a site very near the eastern or windward end of San José wharf. Drainage and sewage from that institution must be deposited under and along side of that wharf. In fact all the wharves on the Havana or city side of the harbor have sewers emptying under them, and their locale, as well as the pile and wooden constructed affairs themselves, are doubtless frequently infected by the cause of yellow fever, as is abundantly proven by the number of vessels invaded by it while lying at them.

A small proportion of vessels bound to American ports have and do take in, sand or earth, or other kind of ballast, while lying at these wharves, and after the first of May, when the heavy crops of sugar are sent forward, as also at other seasons of the year. Three vessels have just left here for the United States after having taken in a quarter or more of their ballast at the wharves, their captains claiming it was necessary to stiffen the vessel while concluding her discharge that she might not tip over.

Both steamers and sailing vessels sometimes discharge and load at and sail from these wharves for ports in the United States, and at all seasons of the year.

The danger to the sanitary condition of the vessel, ballast, and cargo consequent on all of the above practices is recognized by your sanitary

inspector as being so great that mention is made of those facts in the consular bill of health for the information of the health officers at the vessel's port of destination.

A report is also made to the supervising surgeon-general of the marine-hospital service, the facts being stated in the Abstracts of the Bills of Health which are forwarded to him.

Very respectfully, your obedient servant,

D. M. BURGESS,  
*Sanitary Inspector, M.-H. S.*

To Surgeon-General HAMILTON.

During the week ended December 15, 1888, there were 10 deaths from yellow fever at Havana.

*Cardenas, Cuba.*—December 14. Good health is reported in town and harbor. Weather cool and fine.

*Nassau, N. P.*—December 15. City healthy.

*Buenos Ayres.*—The United States consul reports for the month of September, 1888, that "The health of the city has greatly improved since last report." Nine hundred and eighty-two deaths were registered during the month, including 11 from small-pox, 13 from enteric fever, and 66 from diphtheria.

*Venezuela.*—The United States consul at Laguayra, under date of November 24, states that "The Government of Venezuela on yesterday announced an epidemic of small-pox at Ponce, Puerto Rico, and communicated the information to the health officers of the ports of the country."

*Bordeaux, France.*—Four hundred and forty-seven deaths were registered during the month of November, 1888; including small-pox, 1; enteric fever, 11; and diphtheria and croup, 17.

*Cartagena, Colombia.*—The United States consul reports, under date of November 24, "Only 1 death from Beri Beri during the past week. No case has resulted fatally amongst the better class."



## MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Menses, Whooping-cough.
Glasgow.....	Dec. 8.....	545,678	224					1	10	7	
Warsaw.....	Dec. 1.....	444,814	240			5			15	13	
Calcutta.....	Oct. 27.....	433,219	256	46						1	
Calcutta.....	Nov. 3.....	433,219	234	54							
Amsterdam.....	Dec. 8.....	389,916	167					1			
Rome.....	Oct. 27.....	393,496	186					3		7	
Rome.....	Nov. 3.....	393,496	181					3		3	
Rio de Janeiro.....	Nov. 18.....	300,000	226		9	1	2				
Rio de Janeiro.....	Nov. 25.....	300,000	233		15	1	2	2			
Copenhagen.....	Dec. 4.....	300,000	99							1	
Edinburgh.....	Nov. 3.....	262,733	76				1			1	
Edinburgh.....	Nov. 10.....	262,733	62								
Palermo.....	Dec. 8.....	230,000	88			1				1	
Belfast.....	Dec. 8.....	227,022	89					4	2		
Genoa.....	Dec. 8.....	179,910	69			1					
Trieste.....	Dec. 1.....	154,500	74		5					1	
Toronto.....	Dec. 15.....	130,000	29								
Stuttgart.....	Dec. 8.....	125,510	40							1	
Bremen.....	Dec. 1.....	122,000	43								
Havre.....	Dec. 8.....	112,074	53					3	1	1	
Barmen.....	Dec. 1.....	109,000	38								
Leghorn.....	Nov. 9.....	102,540	44				1				
Leith.....	Nov. 3.....	74,320	24								
Leith.....	Nov. 10.....	74,320	22								
Mayence.....	Nov. 10.....	65,802	24								
Mayence.....	Nov. 17.....	65,802	25					1	1	1	
Callao.....	Dec. 1.....	34,000									
Guayaquil.....	Nov. 27.....	32,000	103					2			
Guayaquil.....	Dec. 4.....	32,000	185		1	1				53	
Yera Cruz.....	Dec. 6.....	23,800	32								45
Yera Cruz.....	Dec. 13.....	23,800	23								
Kingston, Can.....	Dec. 21.....	17,300	2								
San Domingo.....	Nov. 10.....	16,000	3								
San Domingo.....	Nov. 17.....	16,000	8								
Cartagena, Colombia.....	Dec. 1.....	13,000	6								
Laguayra.....	Dec. 1.....	7,428	9								
Turk's Islands.....	Nov. 28.....	5,000	8								
Paita.....	Dec. 1.....	4,000									
Bluefields, Nic.....	Dec. 1.....	2,000	1								
San Juan del Norte.....	Nov. 26.....	1,004	1								

## UNITED STATES.

*Florida.*—The following inspection reports have been received :

*Ocala, Fla.*—Ocala, the county seat of Marion, was incorporated three years ago; it is about 100 miles south of Jacksonville, and has a population of nearly 4,000. This place has many advantages, being in the heart of a rich and productive country; it is also a railroad center, and only six miles from the celebrated Silver Springs. Like many other Florida towns, it has passed through a conflagration which swept away her wooden structures. These have been replaced by substantial brick buildings, giving the place an air of stability and permanence. The public spirit and enterprise of the people is further shown by the fact that there is now being erected a mammoth structure in which is to be held next month the "International and Semi-Tropical Exhibition," in face of the visitation that afflicted other portions of the State so recently.

The water-works are situated 800 yards south from center of town and 45 feet above it. The water is obtained from a bore 227 feet deep,

and is pumped into a receiving well, then carried to a stand-pipe 400 yards east at an elevation of 75 feet, thereby securing sufficient pressure in case of fire to throw a stream 60 feet high without the aid of an engine. This is only a temporary arrangement. In the near future it is proposed to complete an artesian well of sufficient capacity to supply the town. It is already commenced, being now 500 feet deep; 20 feet of sand was first penetrated, then a bed of clay 90 feet deep, next 335 feet limestone rock, when flint rock was found.

Cistern water is used to a limited extent, and surface wells, average depth 35 feet, are scattered all over town. In low places water can be had 60 feet deep, while on the hills 30 feet is the average.

Numerous natural openings or sinks carry off the storm and spring waters in the county. Within the corporate limits, also, there are a few which seem ample for the purpose. A driven hole, 9 inches in diameter, communicating with a subterraneous passage, carries off the fluid sewage of two principal hotels and jail. There is no system for the disposition of privy contents.

In the suburbs are two limestone quarries and kilns in active operation. The lime is shipped all over the State and Georgia, and the debris is utilized on the sand streets and sidewalks to give firmness to them. An interesting fact is that these quarries abound in the skeletons of fish and shell.

The soil of the county is composed of humus, lime, and sand; clay also enters into it, and predominates, as in nearly all hummock land.

The cemetery is within corporate limits. No burial permits are issued. Mayor and president of county board of health, Dr. Thomas P. Gary; city physician, Dr. E. Van Hood.

The prevailing fever is remittent; of late there is no tendency to a hæmorrhagic form. This only prevails when there is extensive upturning of soil. After the rainy season in the fall, fever to any extent is seen. Intermittent or typhoid is rare.

Respectfully submitted,

J. F. HARTIGAN, M. D.

To Surgeon-General HAMILTON.

*Tavares.*—Tavares, the county seat of Lake, is located on the west end of Lake Dora. Its population is 200. Average height above lake, 15 feet. The water supply is principally from driven-wells 25 to 30 feet deep; water is secured below a clay bed, which is found 4 or 5 feet thick under the sand. Pine woods surround the place, except on the north side, along the shore of Lake Eustis, where there is a strip of hummock land.

The town is built on a ridge, turtle-back shape, running northwest and southeast, the principal drainage being effected by ditching into Lake Dora. On the north side it is directed toward Lake Eustis. West of the railroad track there are several acres of marshy land which overflows from the lake. Five railroads center here; it is the terminus of four—Florida Railway and Navigation; Jacksonville, Tampa and Key West; Tavares, Orlando, and Atlantic; and Tavares, Apopka, and Gulf—the Florida Southern passing through.

Night-soil is required to be removed weekly outside the corporate limits, and dumped into a canal of rapid current, which communicates with the lake. The authorities require water-tight boxes to be used, and these, after being treated with lime, are emptied into the canal and cleaned.

Cemetery is one mile west of town on a hill. No burial permits are issued.

Mayor, W. H. Latimer; member county board of health, Dr. J. M. Taylor.

There were three deaths this summer; two from "malaria,"—both children. They were seized with a chill, followed in an hour by fever, and died within twelve hours. More than a month elapsed between these deaths, and they lived in different parts of the town. Three deaths also occurred last year, only one an adult, from malarial fever.

Very respectfully,

J. F. HARTIGAN, M. D.

To Surgeon-General HAMILTON.

*Brooksville, Fla.*—Brooksville, the county seat of Hernando, is 327 feet above the Gulf—16 miles from the coast. It was incorporated in 1881 and has a population of 1,000; its area is 1 mile square. The topography of the county is of a broken, hilly, and rolling character. On many of its hills springs, forming small rivulets, wind their way into the valleys, and with the storm water finally empty into what are called sinks. These curious and interesting provisions of nature are quite numerous, and consist of openings in the ground, some of which are large enough to enter and explore long distances, when others are encountered flowing into them, thus presenting somewhat a subterranean circulatory system. These natural sewers seem to be efficient for drainage purposes. Occasionally, however, they will become temporarily obstructed by branches of trees or vegetation, as I saw in one instance, resulting in the flooding of the surrounding area. In time this decays and softens, and, yielding to the superincumbent pressure, is forced through, and in a night large bodies of water will have disappeared. This natural drainage prevents what would otherwise necessitate a heavy outlay and contributes materially to a good sanitary condition.

To show the cavernous character of this portion of Florida, there was recently discovered under a hill a few miles from Brooksville a river 20 feet wide, reached by a zigzag descent of more than 300 feet, which, so far, has been explored 700 yards.

The water supply of the town is chiefly from wells, 16 to 30 feet deep. There are a few cisterns. In digging wells red clay is found two or three feet below the sandy surface, averaging 10 to 12 feet in thickness; it then changes to a whitish color. The best water is below this. Just east of the corporate limits there is a ridge of rock. Artesian water is contemplated soon, a sufficient amount having been levied for the purpose.

There is no regular system for removal of contents of privies.

The cemetery is situated 1½ miles from business portion of town, on a flat. No burial permits are issued.

Mayor, C. J. Bowden; city physician, Dr. S. Stringer.

The town is reached by the Florida Southern Railroad. It is practically on a clay hill, the principal drainage finding its way into an adjacent prairie, to be carried off by the natural sinks referred to. These are supposed to unite and form the coast streams, or the water meanders towards the interior, hundreds of feet under the surface, becoming purified in its turbulent course, finally contributing to supply the numerous lakes. East and northeast of the town are rolling high

pine hills, or hummock land, with a red clay subsoil. South two or three miles is flat level land. West for three or four miles it is rolling, and then becomes flat—dry sand-hills, covered with scrub pine, reaching to the coast.

It is the experience of some physicians there that hæmaturia, when a symptom of remittent fever, was found where quinine had been used for any length of time. On its suspension this symptom would subside and recur after returning to the quinine. A dentist died about five years ago with symptoms that would be called yellow fever; perspiration stained his shirt a saffron color. Several physicians saw him, it being the only case of the kind that occurred during the season. He changed yellow, had a temperature of 105°, and for about twenty-four hours he vomitted black matter almost incessantly. The first ejecta was pure blood. No water was passed thirty-six hours before death.

Very respectfully,

J. F. HARTIGAN, M. D.

To Surgeon-General HAMILTON.

*Leesburg, Fla.*—Leesburg, Lake County, lies on the peninsula between Lakes Griffin and Harris, at the intersection of the Florida Southern and Florida Railway and Navigation Railroads. It was incorporated in 1873; population about 1,000.

The town is built on a ridge 1½ miles long, and ¼ mile wide. Two or three of the main streets have been clayed on the surface for hard travel. Most of the storm-water runs from these streets into ditches which communicate with Lake Griffin. In the northern part of the town the drainage is directed towards a pond, where it sometimes lays when the ditch becomes obstructed. In other parts on account of the porosity of the soil, the water soon disappears after the heaviest rain. The country east and west is pine wood; north and south hummock land.

There are fine artesian wells, the deepest a 4-inch is 500 feet; the one of least depth is 90 feet. Although more wells are contemplated, the present meet all requirements. More than half of the population use surface wells and cistern water. In sinking artesian wells 10 feet of sand is first penetrated, when a clay bed is struck which averages 80 feet thick; then sand-rock is found, perhaps 10 or 12 feet in thickness. A cavern is now reached and the drill is apt to drop 40 feet. The floor or bed of this cavern is flint-rock, which may be drilled from 50 to 300 feet before sufficient flow is found. Fissures are sometimes discovered 8 or 10 feet deep in the clay through which the loose sand drops. In the sand-rock mentioned, and entering into its composition, there is also found petrified shell.

Night soil is required to be removed three times a week, when it is carried a mile from corporate limits, disinfected with lime and copperas, and then buried. The zinc-bucket system has been ordered by the council at the suggestion of the board of health, and will soon be inaugurated.

Mayor, L. B. Lee; city physician and president county board of health, Dr. R. H. Dean. The cemetery is situated on a hill 1½ miles from the business portion. Burial permits are not required.

For two years the town was remarkably healthy, but lately there has been an outbreak of remittent fever, one case that I saw with Doctor



Dean assumed a hæmorrhagic form; the patient's business, however, exposed him to the night air and wet weather. There were 2 deaths last year between May and October, both from zymotic causes. This year, during the same period, three deaths were reported—all children. As far as I can learn there has been no history of yellow fever in the county. A refugee from Tampa had the disease last year, but on isolation it did not spread, and the patient recovered.

Very respectfully,

J. F. HARTIGAN, M. D.

To Surgeon-General HAMILTON.

*Eustis.*—Eustis, Orange County, is situated on the east shore of Lake Eustis, on the Florida Southern Railway. The town is one and a half miles square, and has a population of 1,000. Its water supply is chiefly from wells 18 to 50 feet deep. A few cisterns are also in use. In digging the wells about 15 feet of sand is penetrated, then a light bed of clay, under which the water is found.

The town is built on an incline towards the lake, formerly the site of piney woods. It is most favorably situated for drainage, hardly any artificial means being necessary for the purpose. Easterly there are high rolling pine lands, and clear water lakes, the whole aspect impressing one with the attractiveness and salubrity of the place. The night soil is systematically disinfected and removed a mile from town; it is then mixed with lime and muck and converted into a fertilizer. On a ridge one mile from the business center, the cemetery is located. Burial permits are required, but the law is not strictly enforced.

There is no history of yellow fever—indeed death from any disease of a malarious nature is comparatively unknown. Mayor, Ralph Badger; city physician, Dr. S. S. Sargent.

Respectfully submitted,

J. F. HARTIGAN, M. D.

To Surgeon-General HAMILTON.

*MacClenny, Fla.*—The town council has passed an ordinance in relation to the disinfection of that place, and ridding it of infected material. The ordinance is as follows:

AN ORDINANCE providing for the fumigation and disinfection of the town of MacClenny.

*Be it ordained by the mayor and common council of the town of MacClenny, Florida.*

SEC. 1. The work of the fumigation and disinfection of the buildings in which there has been cases of yellow fever shall be commenced at once, and prosecuted to completion.

SEC. 2. The board of health of said town hereby delegates all its powers in this matter to Dr. J. L. Posey, U. S. sanitary inspector, M. H. S., who is hereby authorized and empowered to enter each and all of said houses, and proceed with such work, in such manner, as he may deem necessary and proper, and he is authorized to remove or condemn any and all infected property belonging to private individuals, and to destroy the same by fire whenever he deems it necessary so to do, upon payment for same at its appraised value, or replaced by other articles of like character and of equal value.



SEC. 3. All persons are hereby forbidden to remove or conceal any article of personal property that may have become infected during the epidemic, but are requested to deliver each and every article that has been in infected rooms, to said Doctor Posey or his agents and servants without delay whenever same is called for.

SEC. 4. Any person violating any of the provisions of this ordinance, shall, upon conviction thereof, be imprisoned sixty days or fined the sum of one hundred dollars in the discretion of the court.

Passed in open session by the council at 7.45 p. m., December 18, 1888. Approved by the mayor December 19, 1888.

J. D. MERRITT,  
*Acting Clerk.*

*Jacksonville, Fla.*—The following letter has been received from Dr. J. Y. Porter:

JACKSONVILLE, FLA., *December 19, 1888.*

SIR: Confirming my telegram of last evening stating that there was a case of yellow fever amongst the returned refugees, I have the honor to explain further by saying that Colonel Thomas, treasurer of the Florida Railway and Navigation Company, arrived in town last Saturday morning, and was taken sick Saturday evening. He sent for Dr. Sollace Mitchell on Sunday, and I saw him in consultation with Doctor Mitchell yesterday morning. The case admits of no doubt of diagnosis of yellow fever, having all the characteristic symptoms, besides about 10 per cent. of albumen in the urine. As a matter of medical interest it is somewhat puzzling to find out just where the gentleman contracted the disease. The history of his whereabouts for the past ten days is as follows: He arrived in Tallahassee December the 11th from New York, where he had been for some time; left Tallahassee at 8 a. m. on the 13th in a special car that had not been anywhere in the State, and, as I understand, in which he came through from New York in company with an official of the L. & N. Railroad. He arrived in Baldwin at 3 p. m. same date, being there only one hour, and not going into any house in the hamlet. From Baldwin, in the same car, he went to Tavares, arrived there at 11 o'clock and left the same night, arriving at Markham at 8 a. m. the next morning, the 14th, leaving at noon the same day; arrived at Sanford 11.30 p. m. of the 14th, and left at 2.55 a. m. of the 15th; arrived at Palatka, where he stayed all night, and arrived at Jacksonville at 9 o'clock a. m. on the morning of the 15th. As I stated before, he was taken sick on the evening of the 15th. The query is, where did he contract the fever? as there had been none reported at any of the places where he is reported to have been during the past ten days. In addition to this case of Colonel Thomas, there is reported a child who came from Starke, Fla., some two or three days ago, and was taken sick the same evening or the morning afterwards with fever, and now has a case of yellow fever. I very much fear that there has been yellow fever all through that portion of the peninsula this summer, and I am convinced in this opinion from the statement that I have heard from reliable authority, that some suspicious cases of fever occurring at Starke were guarded closely by the inhabitants. Whoever inspects that portion of the State should be acquainted with these facts for his information.

Very truly yours,

JOSEPH Y. PORTER, M. D.,

*Surgeon in Charge Government Relief Measures, Florida.*

To Surgeon-General HAMILTON.

## MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
New York, N. Y.	Dec. 22	1,547,756	779					1	7	52	48	26	12
Philadelphia, Pa.	Dec. 15	1,016,758	331						10	9	11	12	12
Brooklyn, N. Y.	Dec. 15	805,885	339						4	12	17	5	8
Brooklyn, N. Y.	Dec. 23	805,885	341						8	8	19	6	9
St. Louis, Mo.	Dec. 15	440,000	161						3	2	14		
Baltimore, Md.	Dec. 22	431,879	137						1		7		2
San Francisco, Cal.	Dec. 14	330,000	106						5		4		
Cincinnati, Ohio.	Dec. 22	255,139	93						2	1	4		2
New Orleans, La.	Dec. 15	248,000	119						2	1	3		
Milwaukee, Wis.	Dec. 22	195,000	52					1		5	4		
Kansas City, Mo.	Dec. 22	180,000	28						3		2		
Rochester, N. Y.	Dec. 22	120,000	47						2			1	
Denver, Colo.	Dec. 21	96,000	25								13		
Toledo, Ohio	Dec. 21	80,000	15								1		
Camden, N. J.	Dec. 20	70,000	15						3	1			
Nashville, Tenn.	Dec. 22	65,153	21										
Fall River, Mass.	Dec. 22	65,000	24						1	1	2		
Lynn, Mass.	Dec. 22	50,000	17								2		
Manchester, N. H.	Dec. 15	41,000	10						1				
Portland, Me.	Dec. 22	40,000	13								2		
Galveston, Tex.	Dec. 7	40,000	10										
Galveston, Tex.	Dec. 14	40,000	16										
Davenport, Iowa.	Dec. 15	33,715	11								4		
East Saginaw, Mich.	Dec. 22	33,000	10										
Auburn, N. Y.	Dec. 22	26,000	6										
Haverhill, Mass.	Dec. 22	25,000	6										
Newport, R. I.	Dec. 20	22,000	7										
Newton, Mass.	Dec. 22	21,105	6										
Keokuk, Ia.	Dec. 24	16,000	6										
Pensacola, Fla.	Dec. 15	15,000	5										
Pensacola, Fla.	Dec. 22	15,000	1										

JOHN B. HAMILTON,  
Supervising Surgeon-General, Marine-Hospital Service.

